Achievement Target Impact Analyses

IL Technical Advisory Committee Meeting

April 26, 2019

Background

- Targets for proficiency increase annually toward the long term goal of 90% in 2032

- Concern has been expressed that these targets will quickly become too rigorous to achieve

- TAC suggested we model how indicator scores will change over time and how this interacts with different rates of improvement to better understand the impact

Method

- Calculated index scores based on increasing achievement targets for ELA proficiency in ES/MS and mathematics proficiency in HS
- Simulated distribution to estimate impact of 1%, 2%, and 3% annual growth statewide
- Calculated random normal distribution for growth (improvement) with fixed mean and SD for all schools
  - Added simulated growth to each school
  - Assumes consistent progress statewide, but not by school
- Caveats
  - Progress is rarely linear across multiple years
  - Method doesn't account for differential improvement rates based on prior year performance (i.e. no schools assumed to progress more/less rapidly than another)
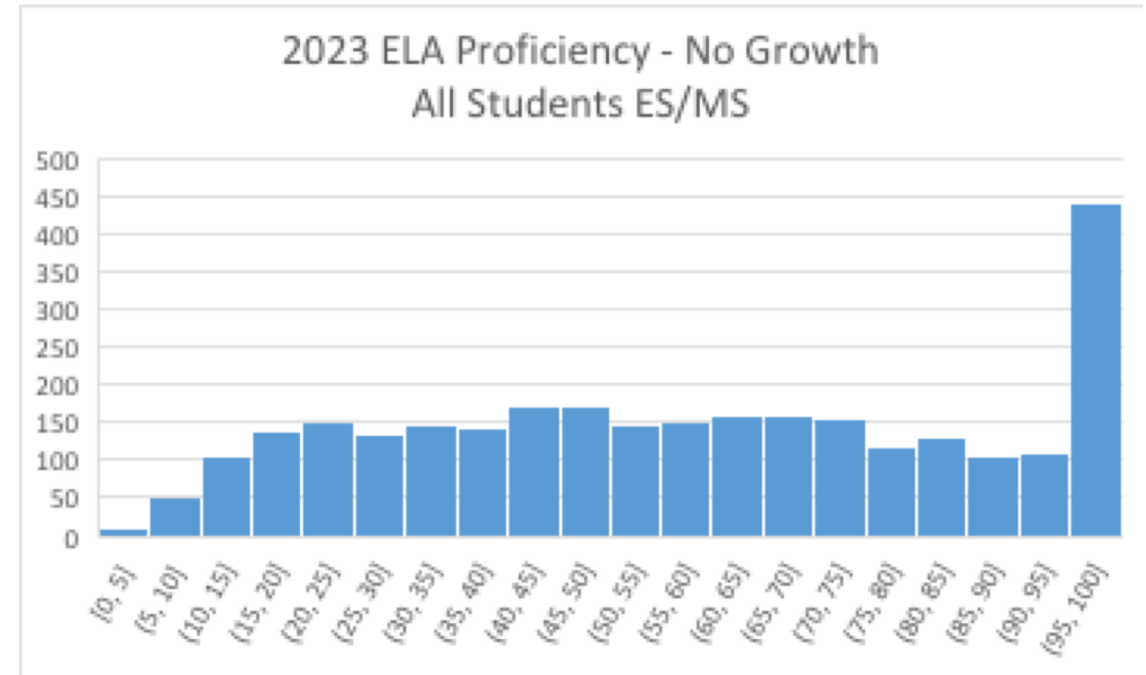
ELA: Elementary/ Middle Schools

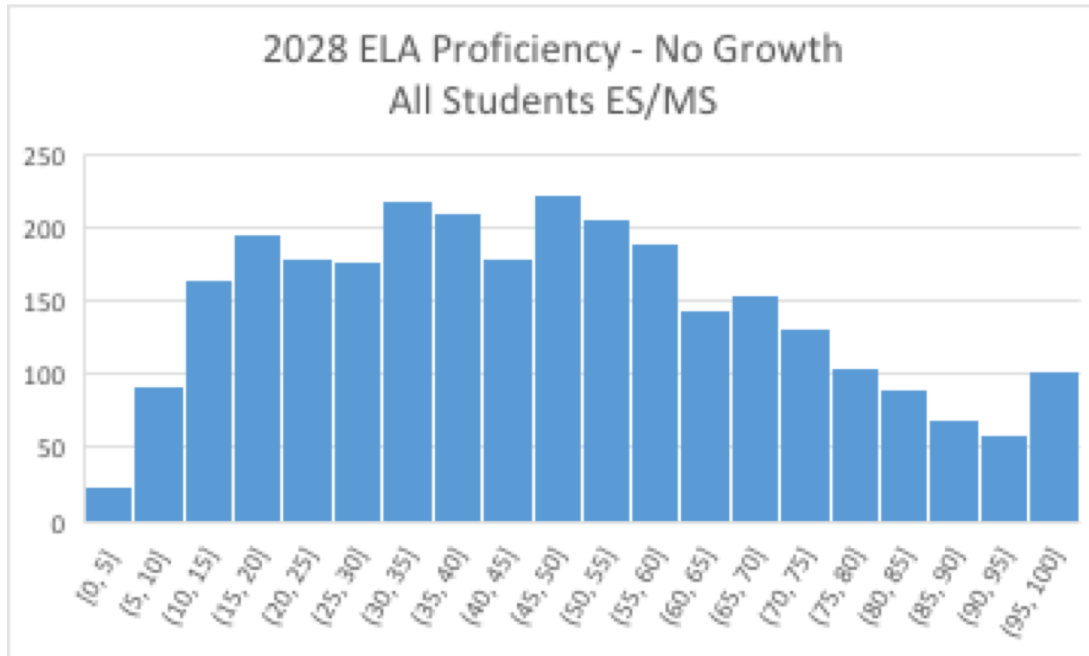# ELA – Elementary/Middle School – 2018, 2023 No Growth

2018 ELA Proficiency All Students ES/MS
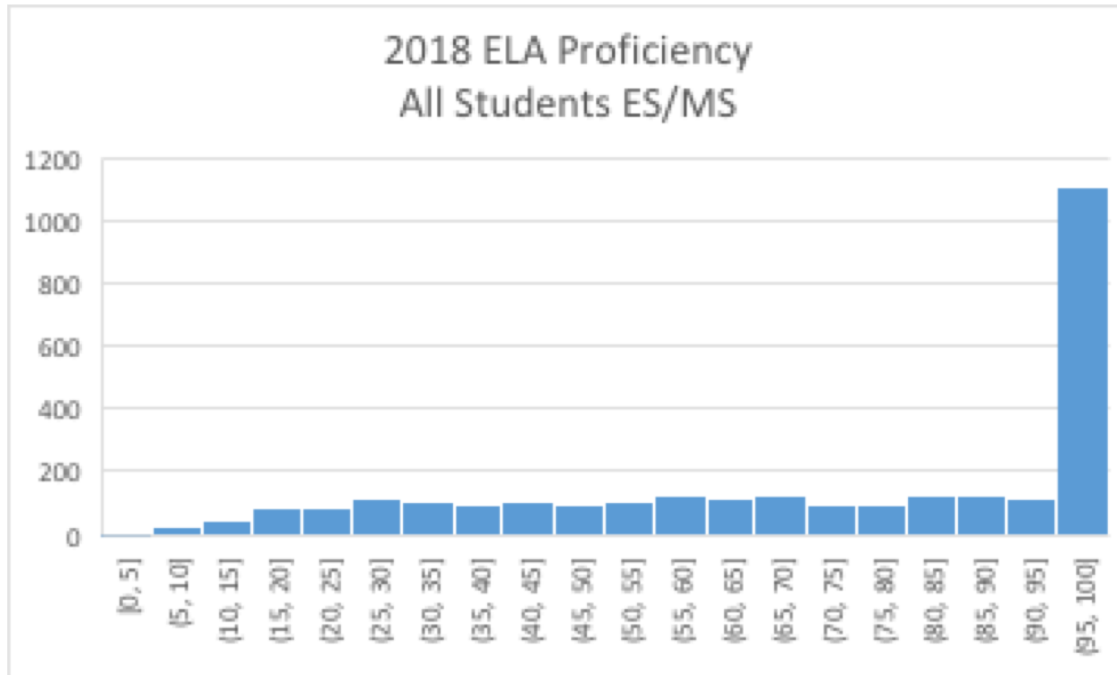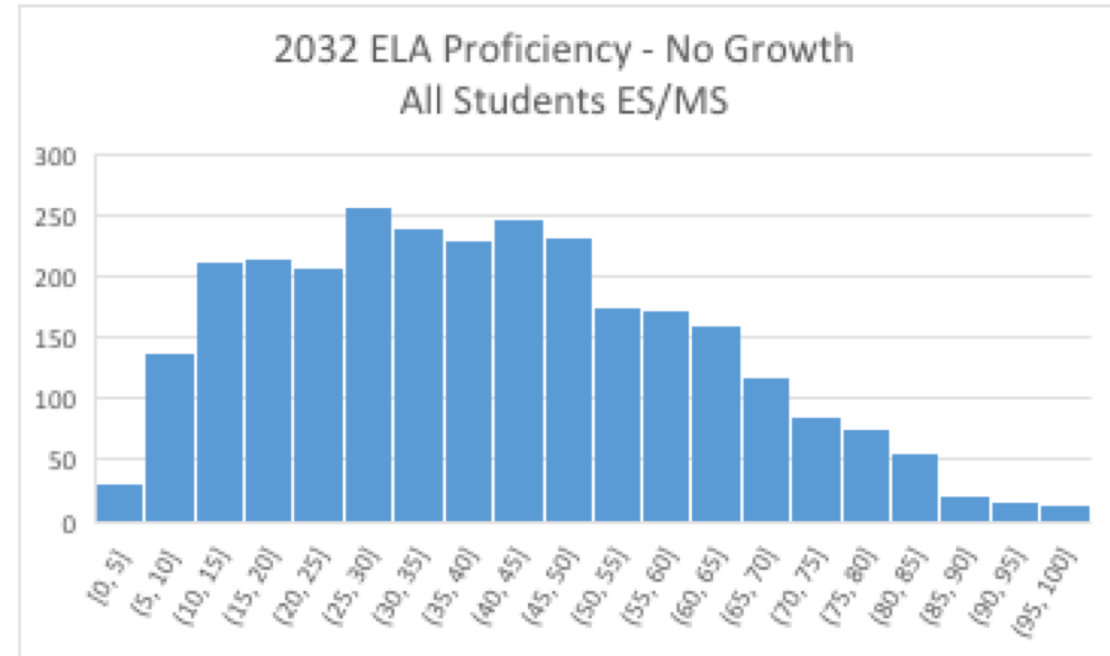
Target: 43.03
Mean: 72
SD: 28.9

2023 ELA Proficiency - No Growth All Students ES/MS

Target: 59.08
Mean: 58.1
SD: 28.1

ELA – Elementary/Middle School – 2028, 2032 No Growth

2028 ELA Proficiency - No Growth
All Students ES/MS

Target: 76.58
Mean: 46.7
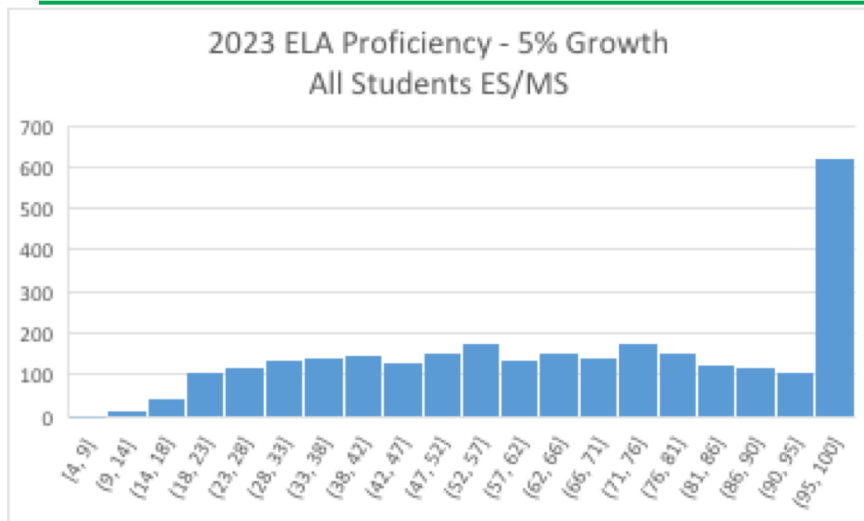SD: 24.3

2032 ELA Proficiency - No Growth
All Students ES/MS

Target: 90
Mean: 39.9
SD: 21

Comparison of ELA Achievement Distributions – No Growth
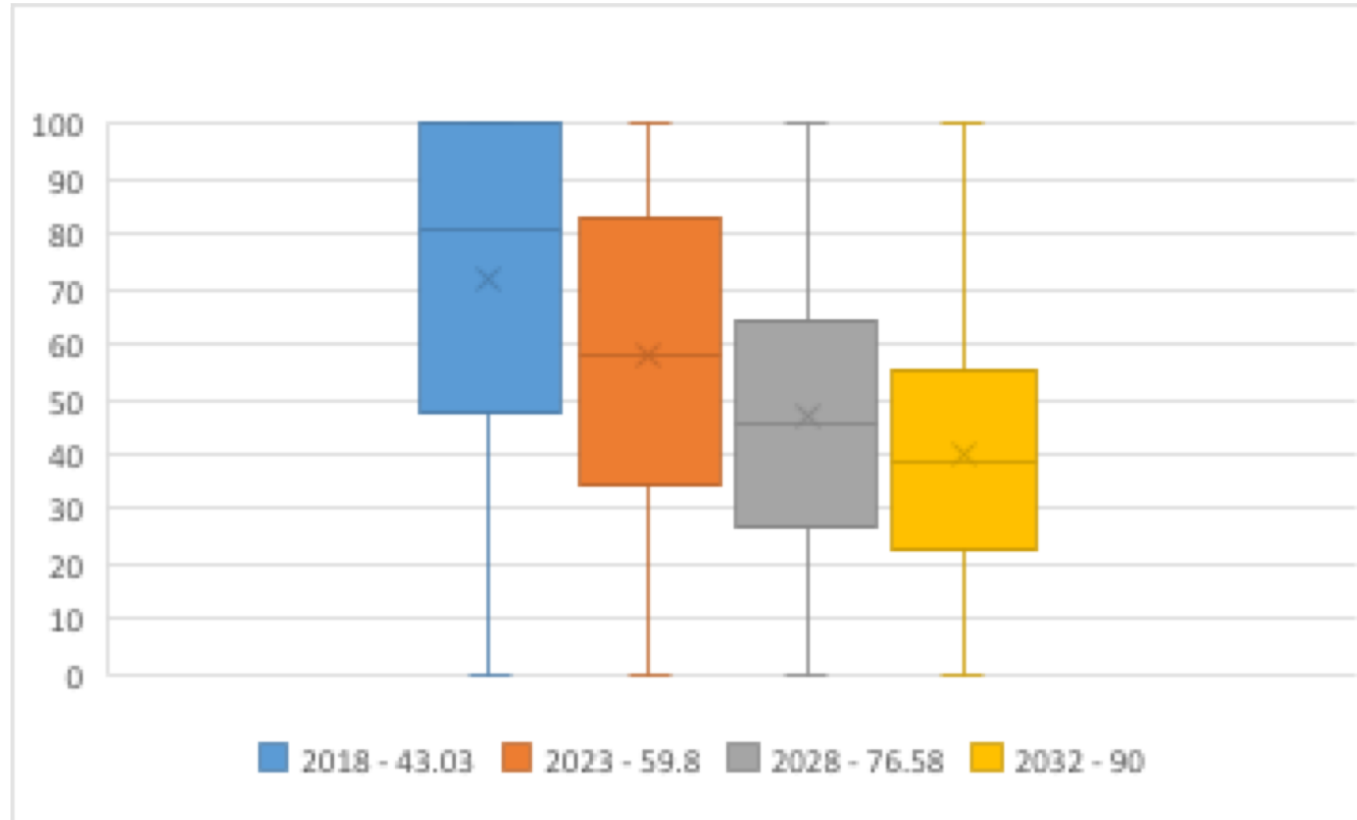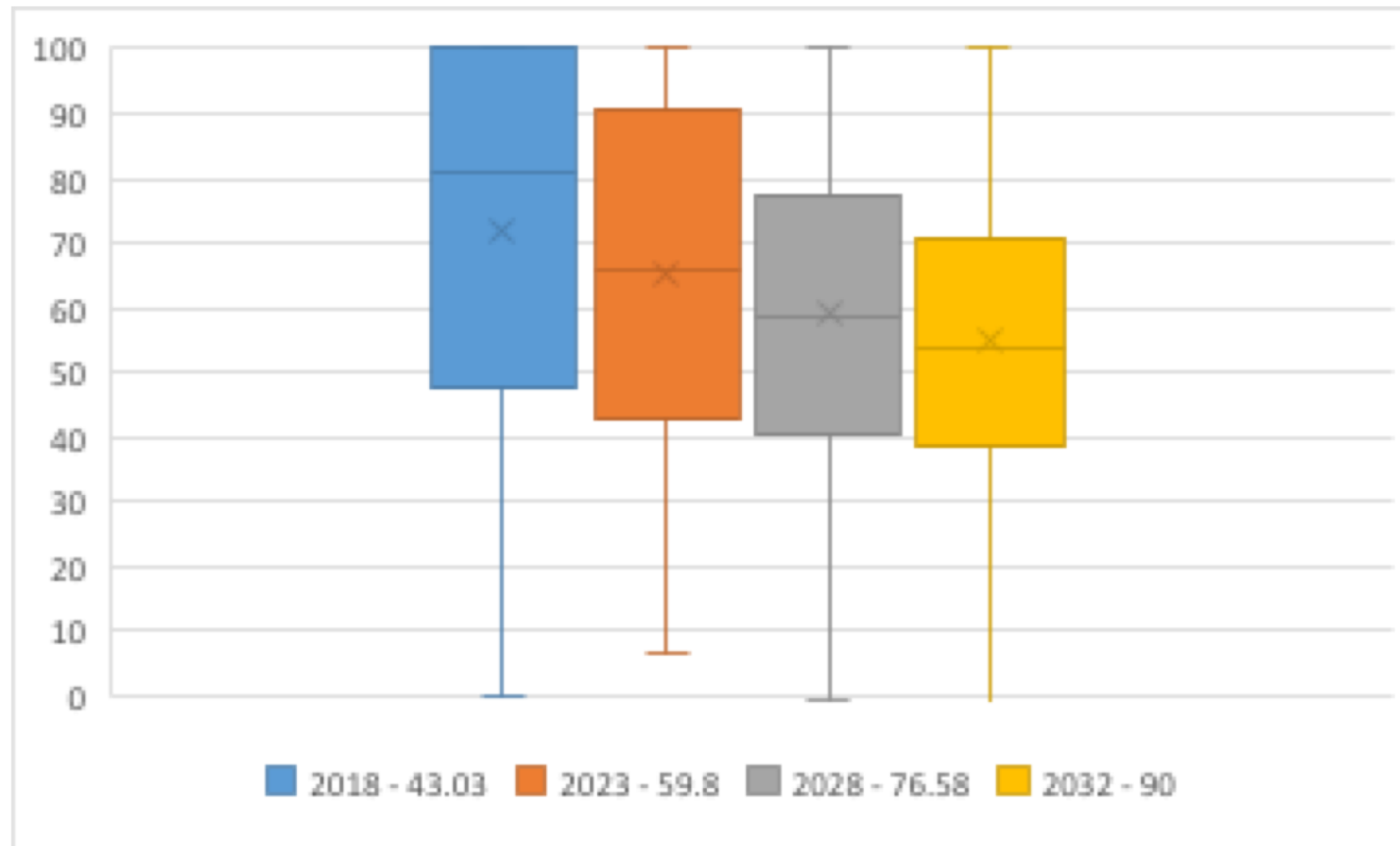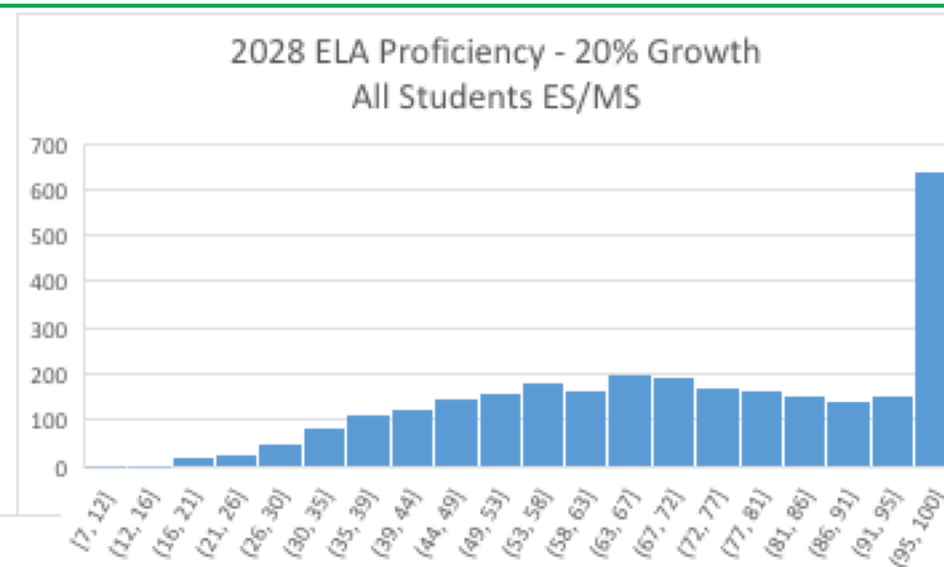
ELA – Elementary/Middle School – 1% Annual Growth

2023 ELA Proficiency - 5% Growth
All Students ES/MS

Target: 59.8
Mean: 65.1
SD: 26.6

2028 ELA Proficiency - 10% Growth
All Students ES/MS
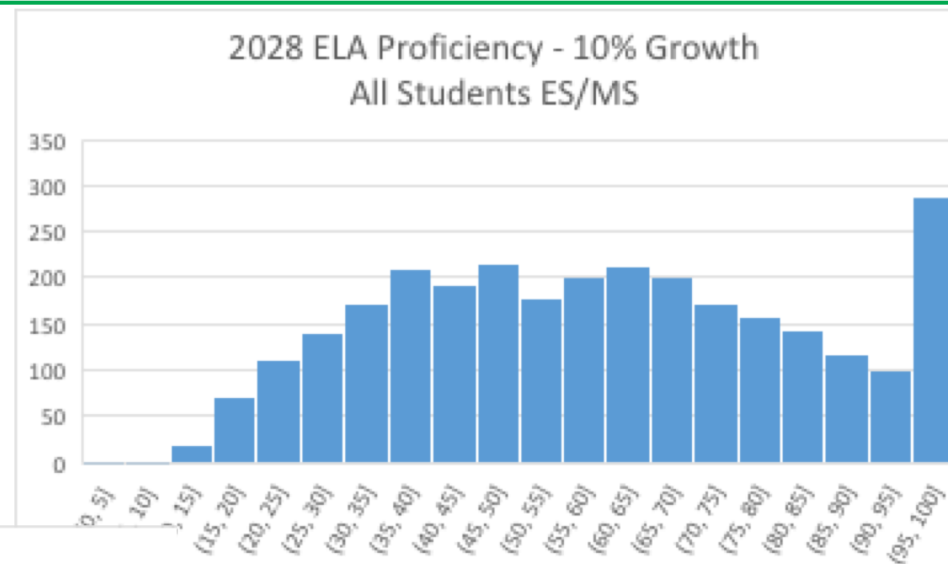
Target: 76.58
Mean: 59.3
SD: 23.7

2032 ELA Proficiency - 14% Growth
All Students ES/MS
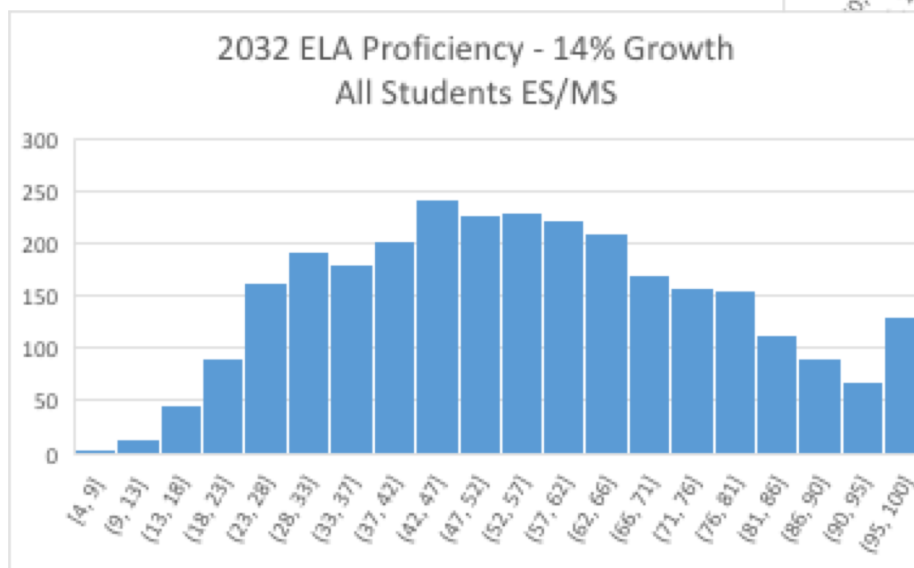
Target: 90
Mean: 55.1
SD: 21.5

Comparison of ELA Achievement Distributions – Projected 1% Annual Growth

Legend: ■ 2018 - 43.03   ■ 2023 - 59.8   ■ 2028 - 76.58   ■ 2032 - 90

ELA – Elementary/Middle School – 2% Annual Growth

2023 ELA Proficiency - 10% Growth
All Students ES/MS
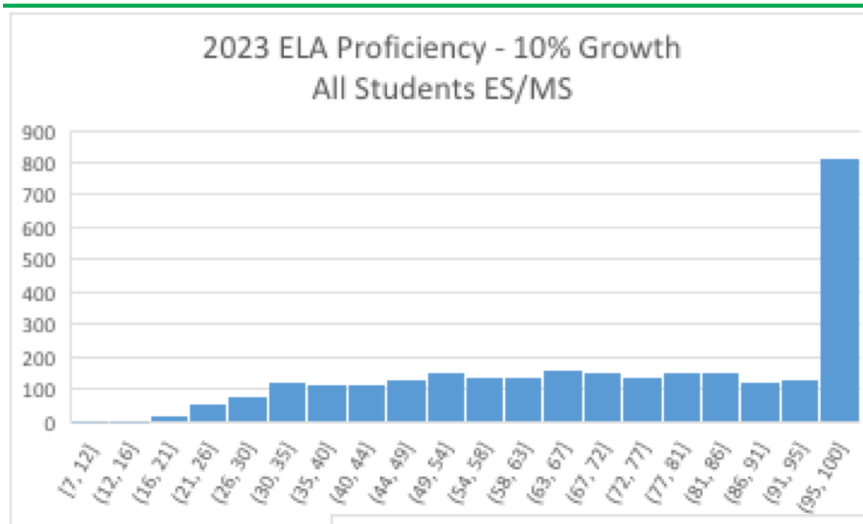
Target: 59.8
Mean: 71.5
SD: 24.8

2028 ELA Proficiency - 20% Growth
All Students ES/MS
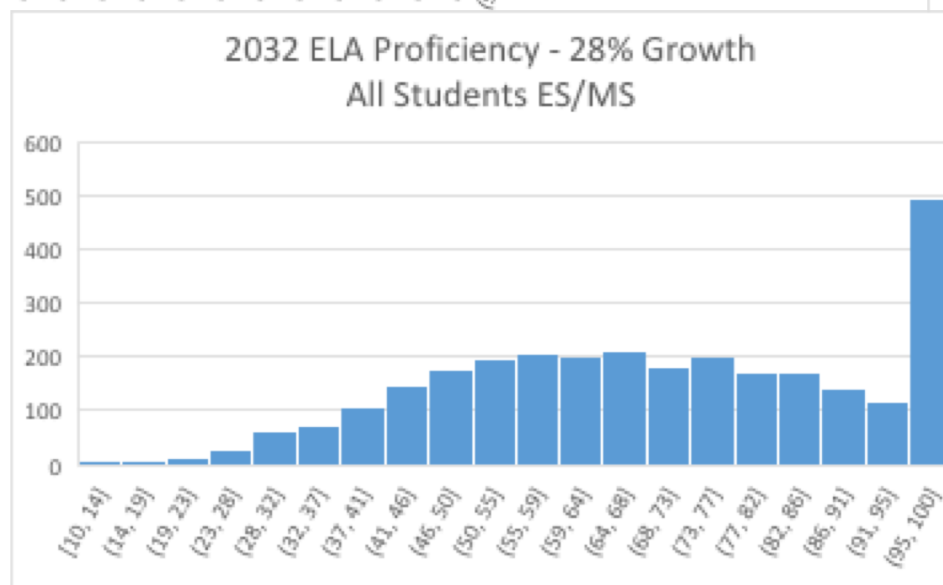
Target: 76.58
Mean: 70.5
SD: 22.6

2032 ELA Proficiency - 28% Growth
All Students ES/MS

Target: 90
Mean: 69.2
SD: 21.3

Comparison of ELA Achievement Distributions – Projected 2% Annual Growth
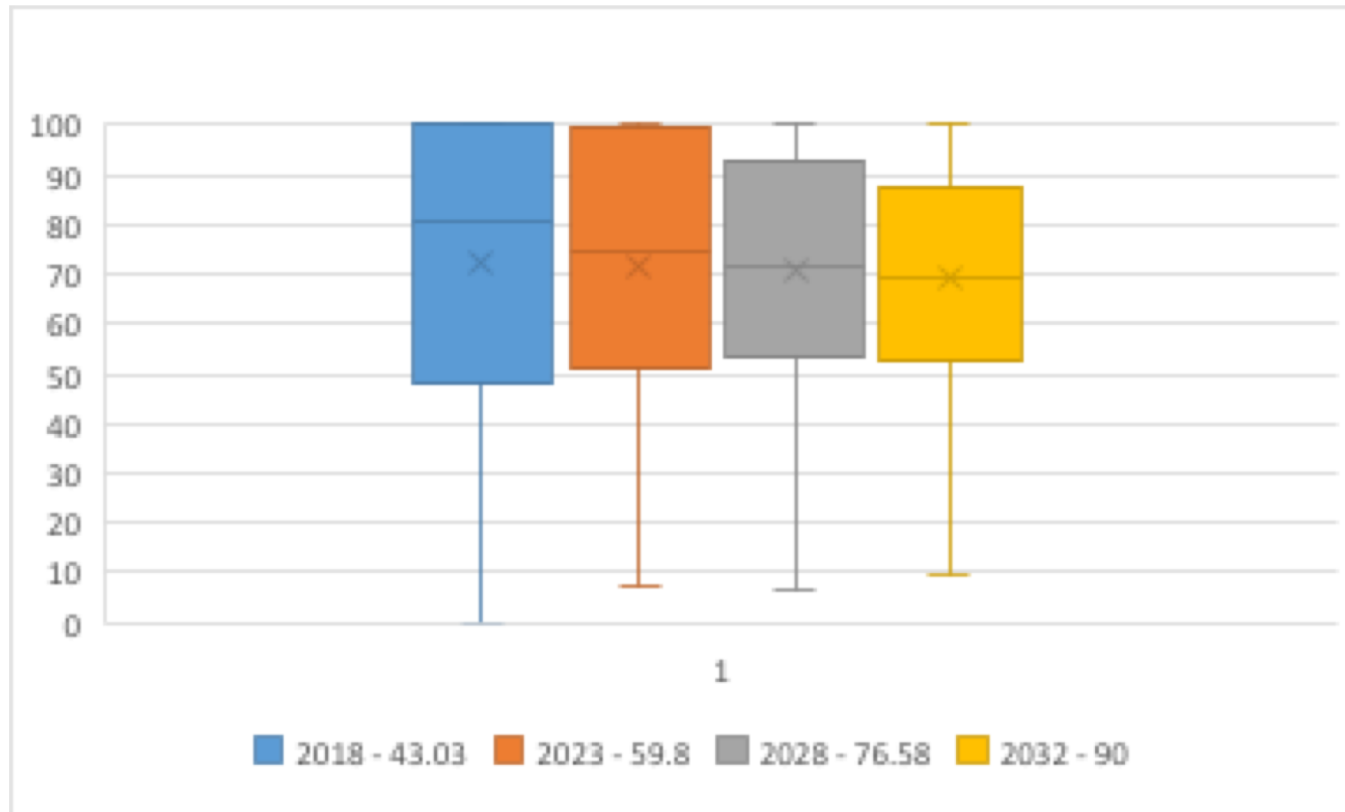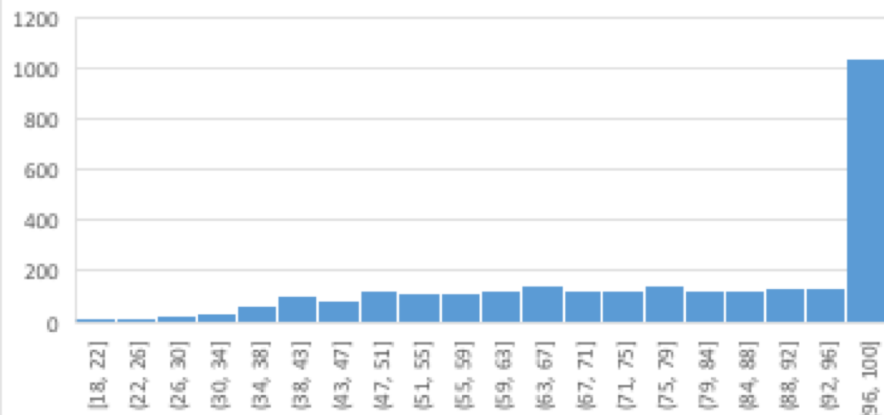
ELA – Elementary/Middle School – 3% Annual Growth

2023 ELA Proficiency - 15% Growth
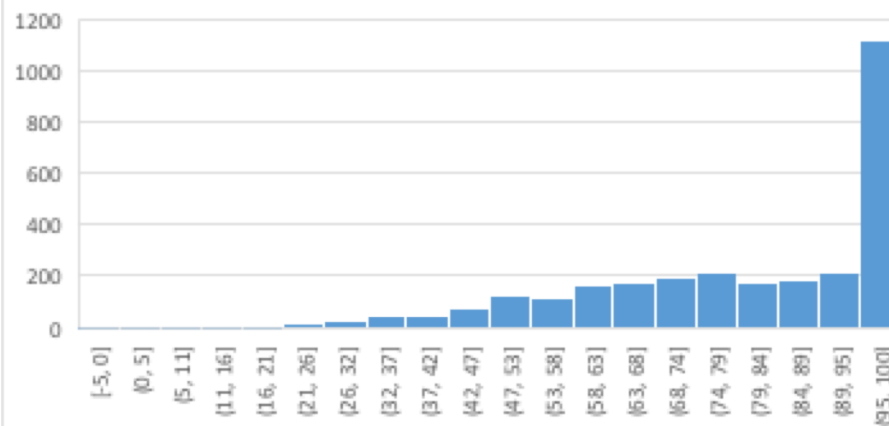All Students ES/MS

Target: 59.8
Mean: 77.8
SD: 22.1

2028 ELA Proficiency - 30% Growth
All Students ES/MS

Target: 76.58
Mean: 79.8
SD: 20.7
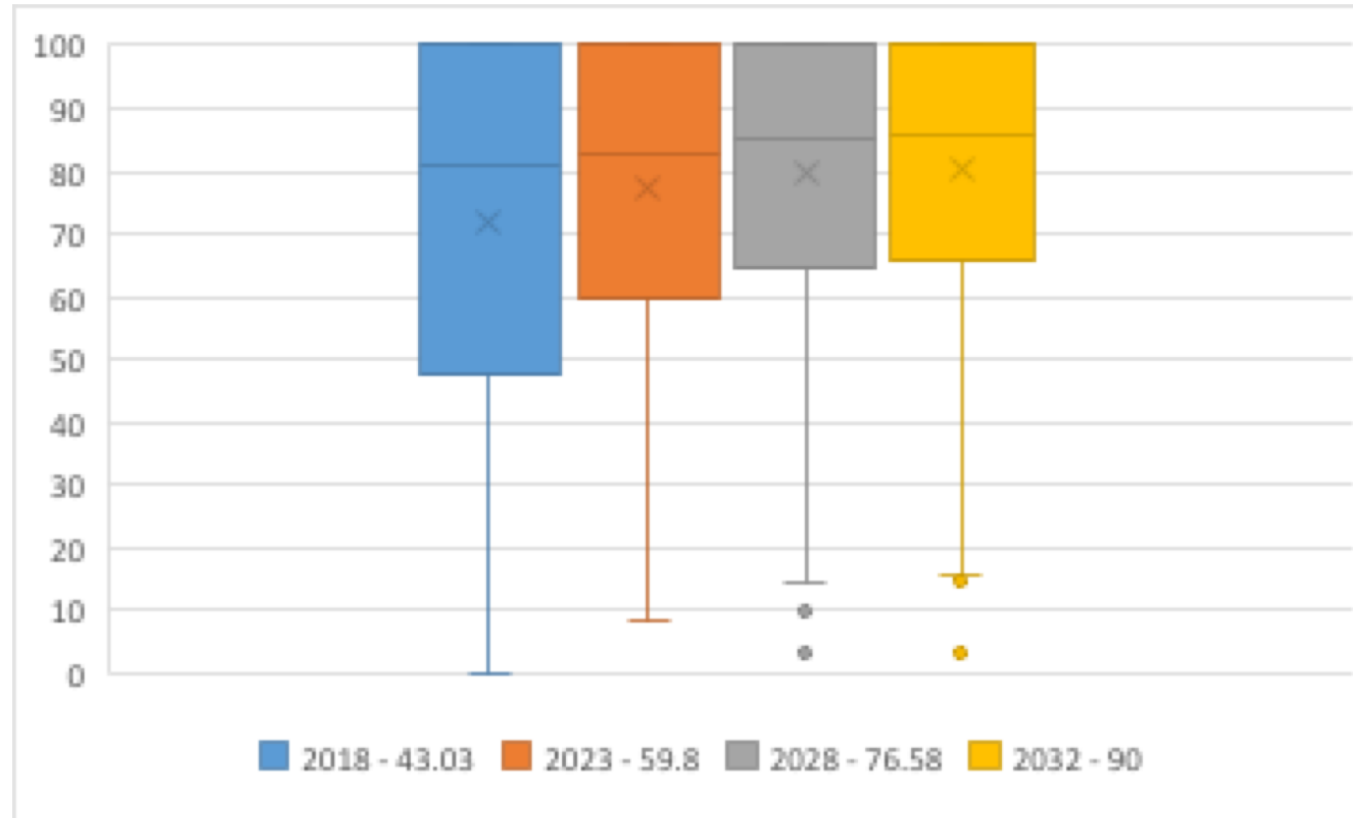

2032 ELA Proficiency - 42% Growth
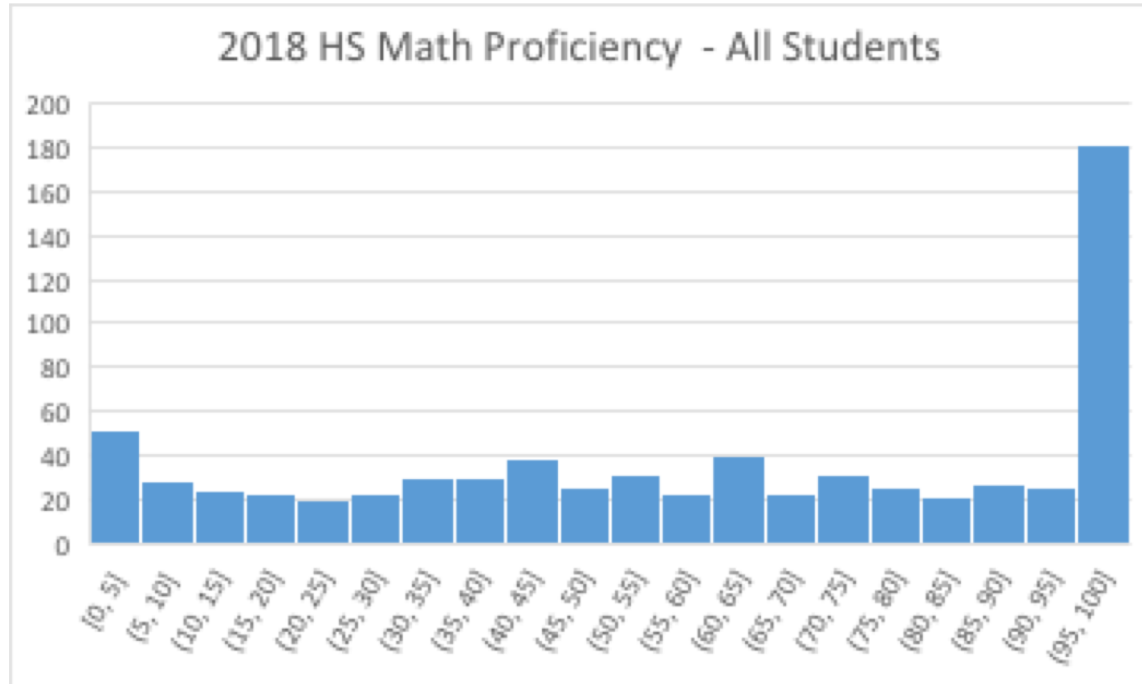All Students ES/MS

Target: 90
Mean: 80.6
SD: 20.4

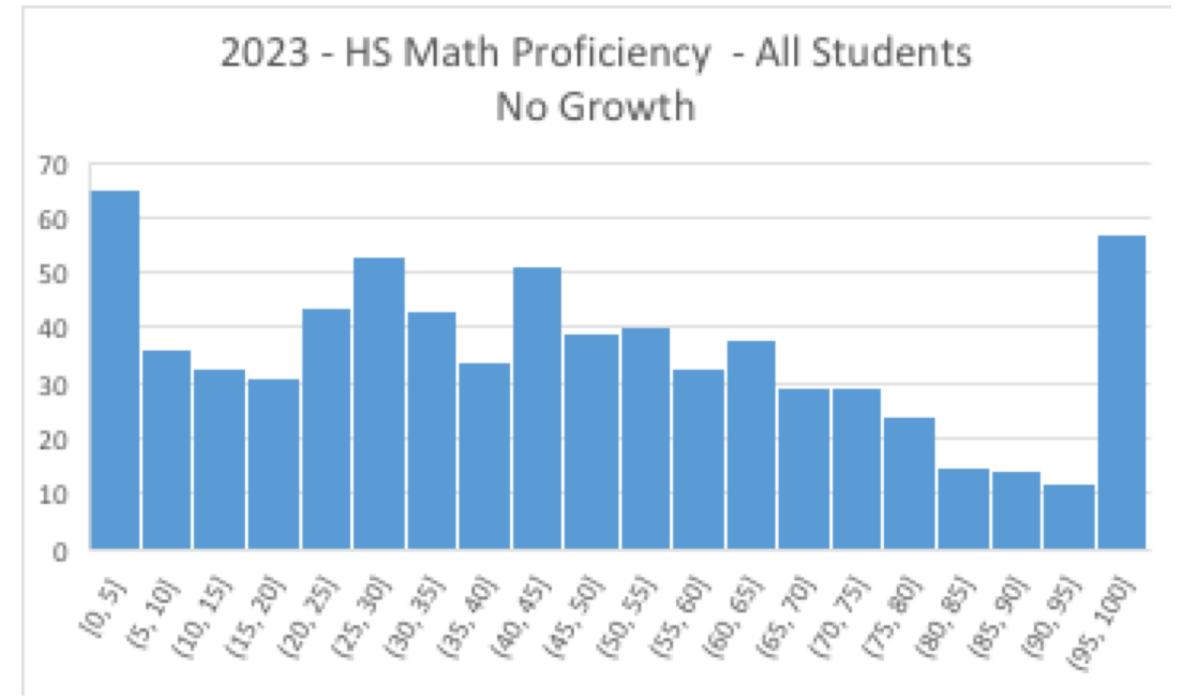# Comparison of ELA Achievement Distributions – Projected 3% Annual Growth

Math: High Schools
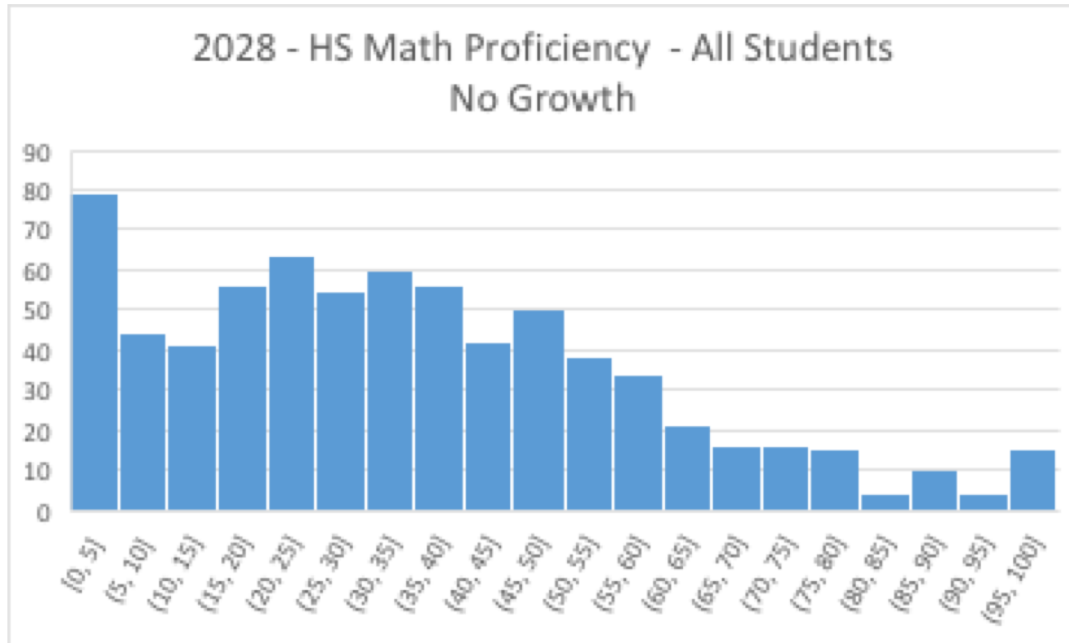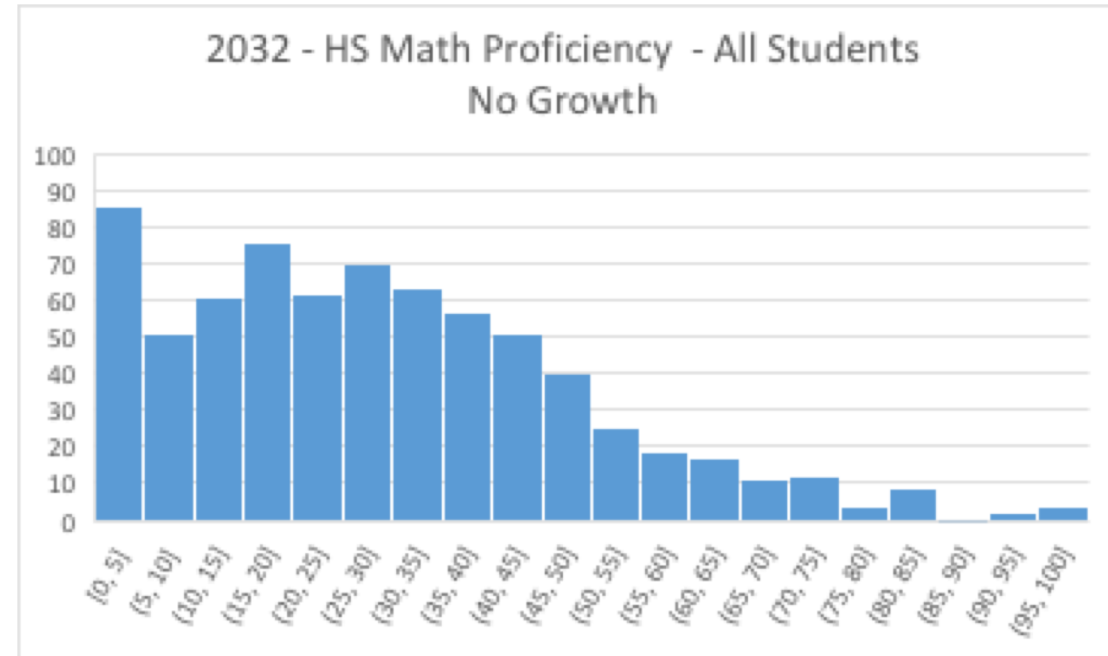
High School Math: 2018, 2023
No Growth

2018 HS Math Proficiency - All Students

Target: 38.93
Mean: 59.3
SD: 33.7

2023 - HS Math Proficiency - All Students
No Growth

Target: 57.17
Mean: 44.4
SD: 29

High School Math: 2028, 2032
No Growth

2028 - HS Math Proficiency - All Students
No Growth

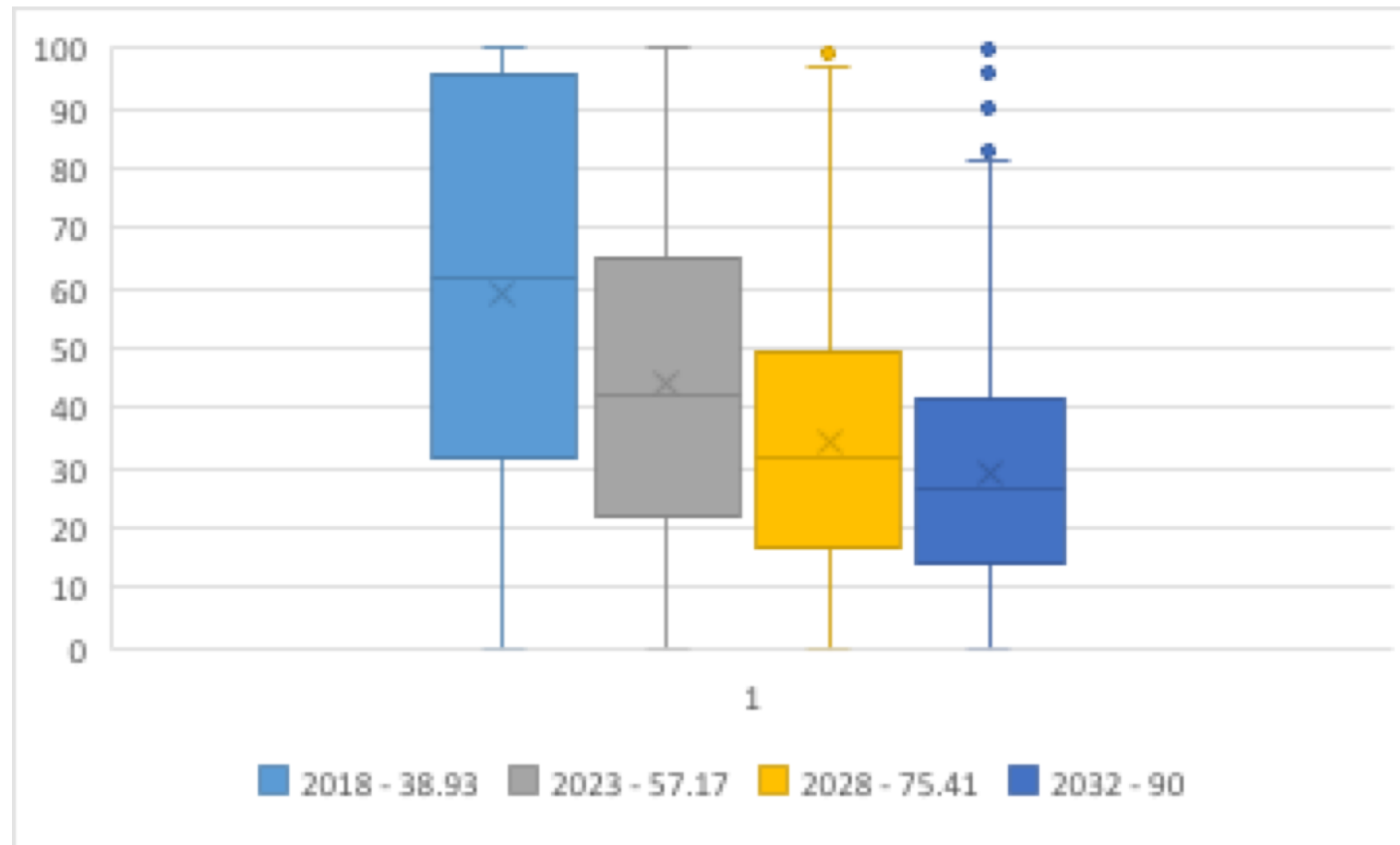2032 - HS Math Proficiency - All Students
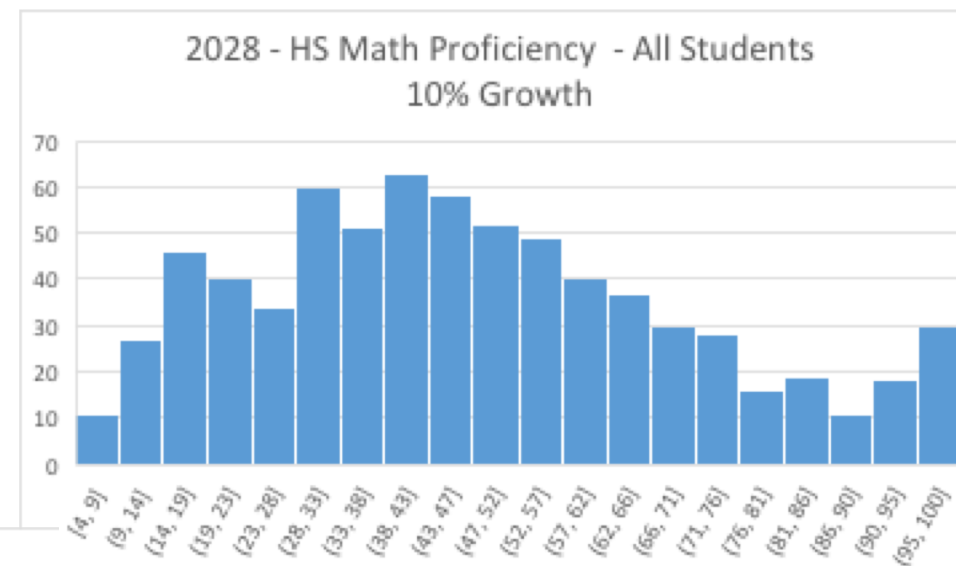No Growth
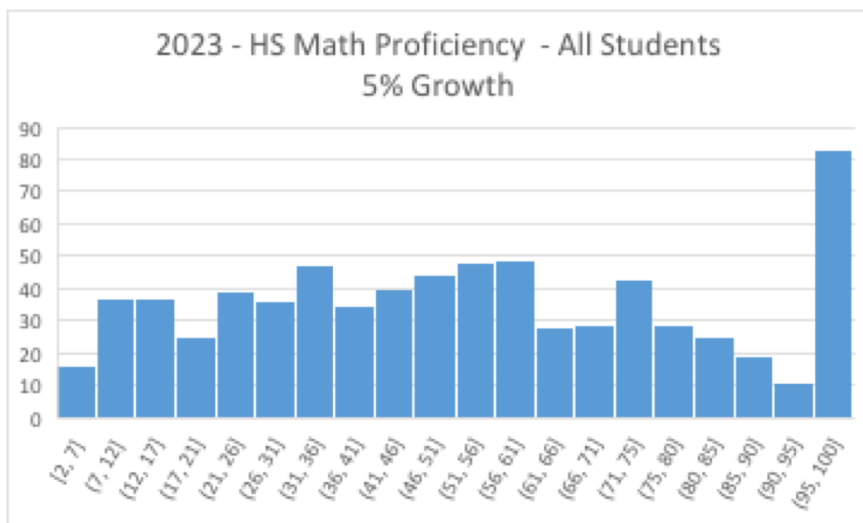
Target: 75.41
Mean: 34.5
SD: 23.8

Target: 90
Mean: 29
SD: 20.3

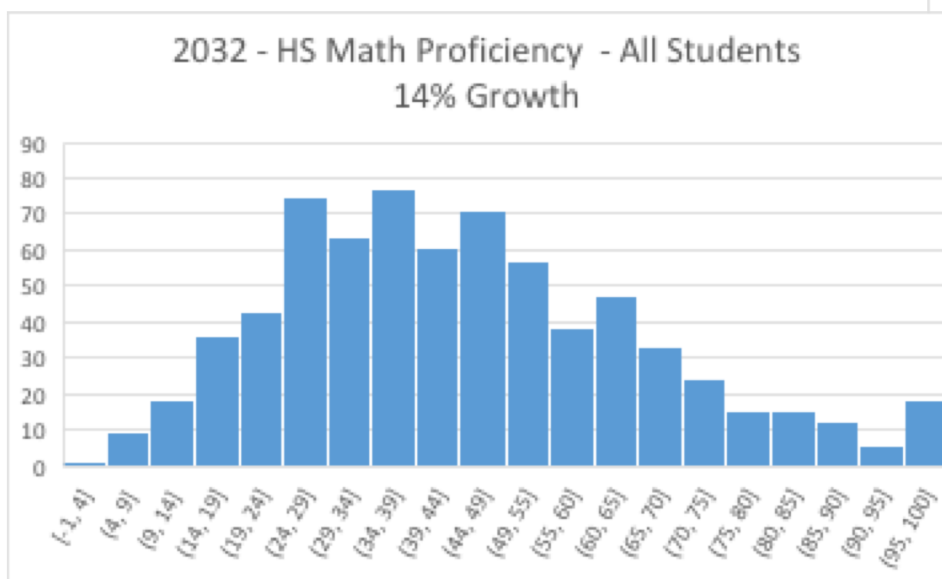# Comparison of Math Distributions
No Growth
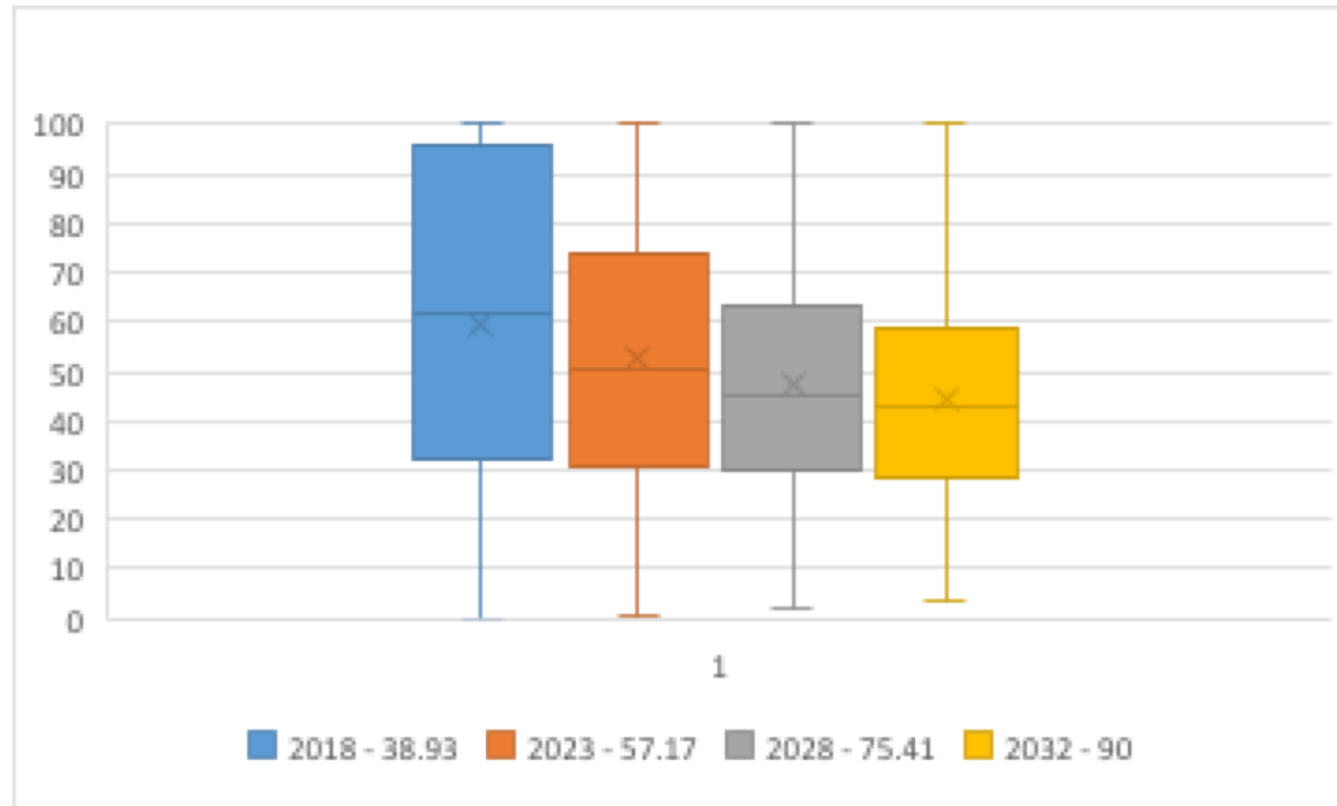
High School Math – 1% Annual Growth
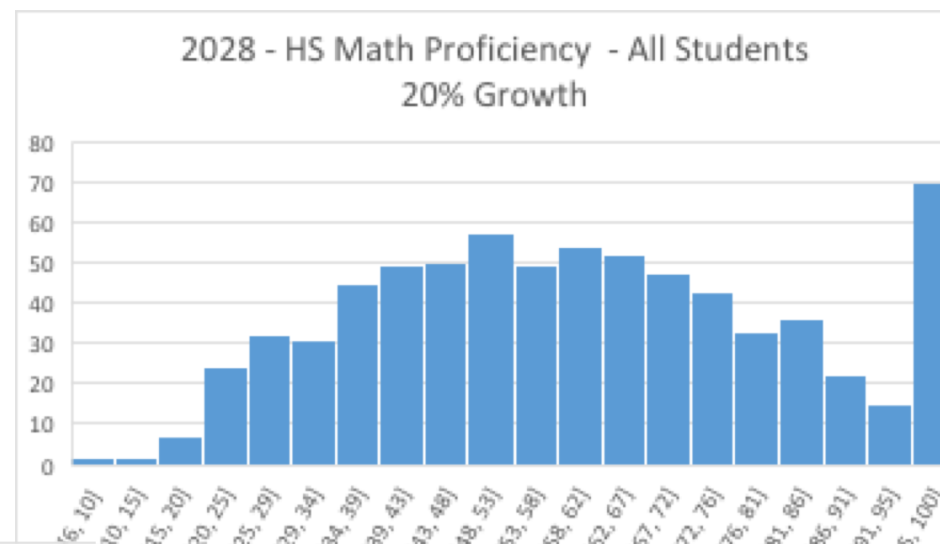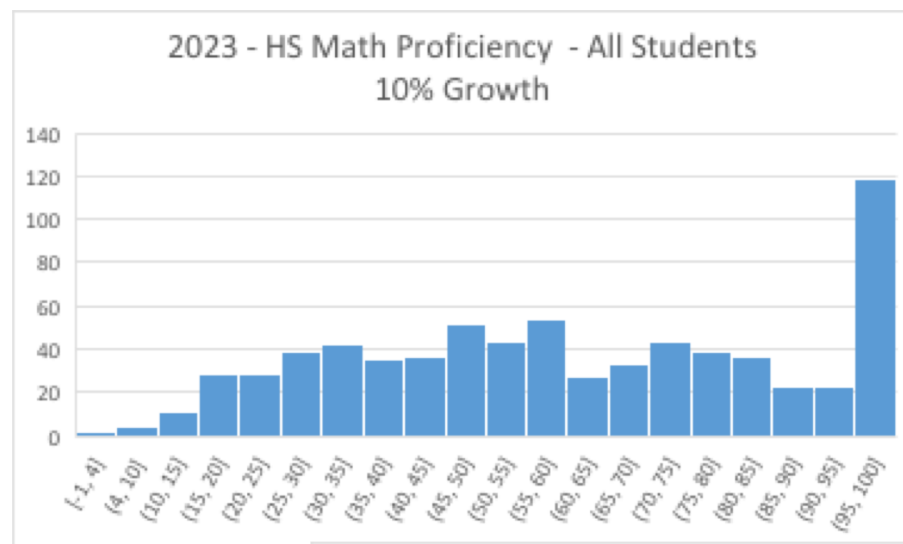

Target: 57.17
Mean: 52.3
SD: 28

Target: 75.41
Mean: 47.6
SD: 23.9

Target: 90
Mean: 44.4
SD: 21.2

Comparisons of Math Distributions 1% Growth

High School Math – 2% Annual Growth

2023 - HS Math Proficiency - All Students
10% Growth

Target: 57.17
Mean: 60.2
SD: 26.9

2028 - HS Math Proficiency - All Students
20% Growth
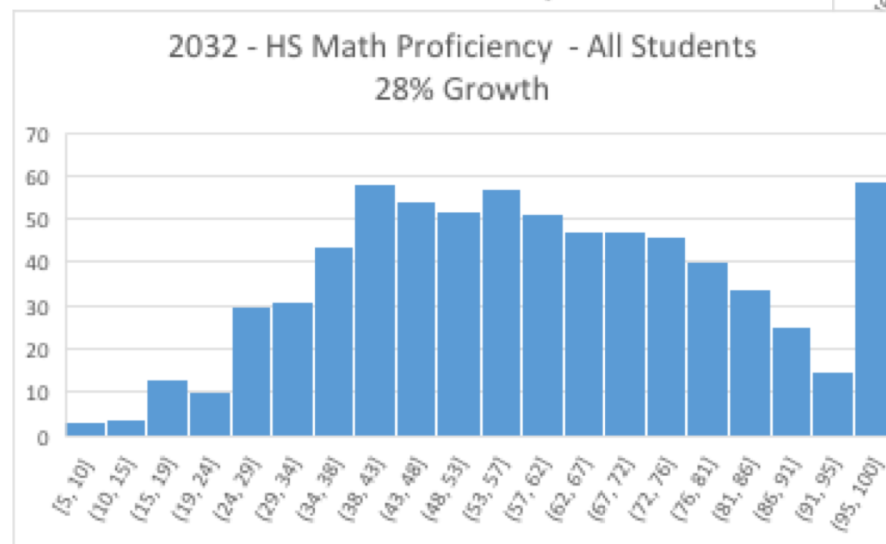
Target: 75.41
Mean: 59.7
SD: 22.5

2032 - HS Math Proficiency - All Students
28% Growth

Target: 90
Mean: 59.2
SD: 29.2

Comparisons of Math Distributions
2% Growth
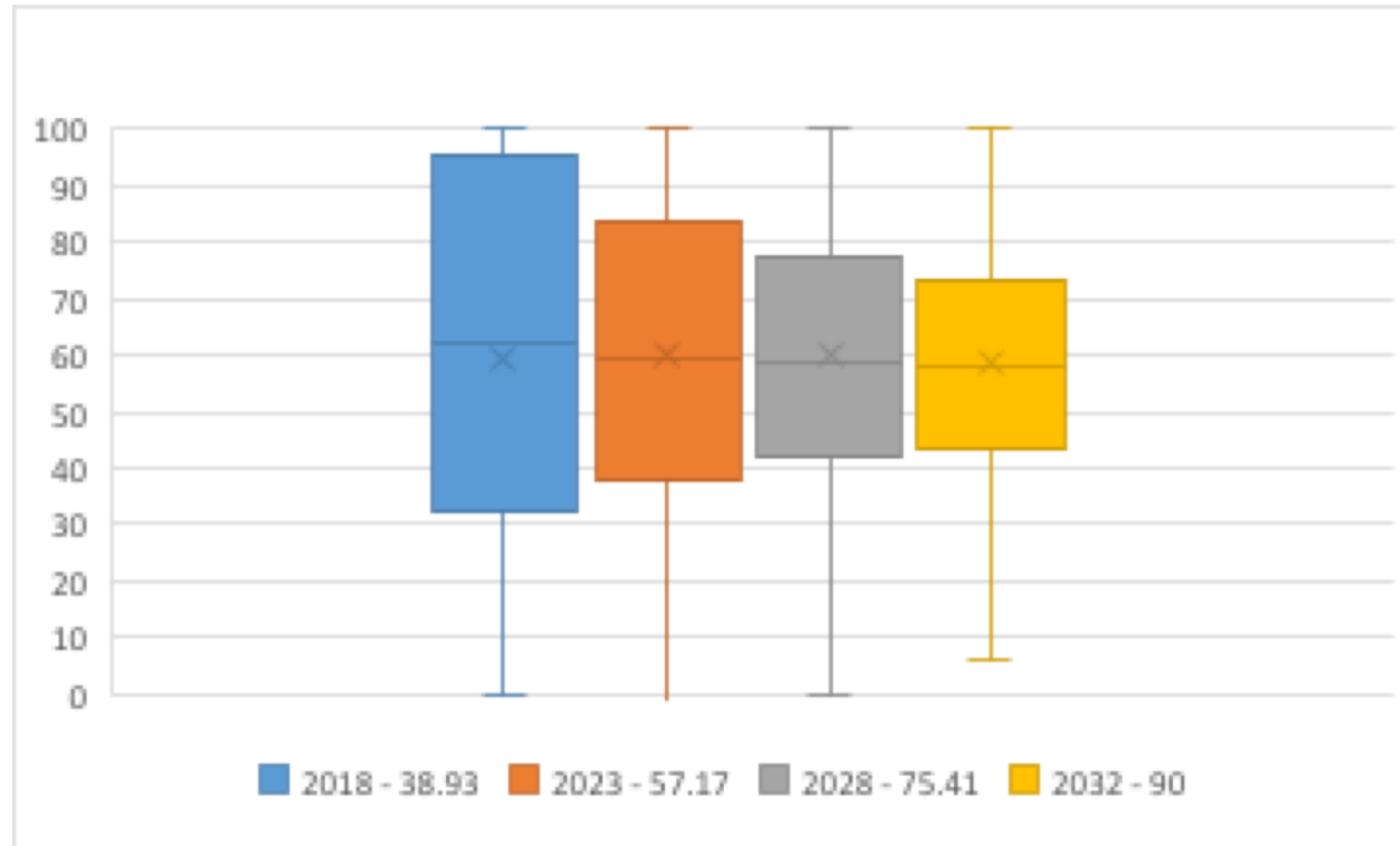
High School Math – 3% Annual Growth

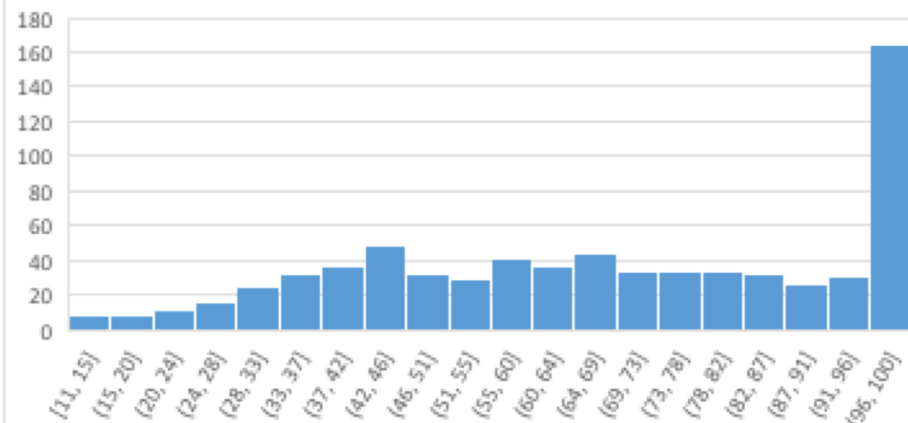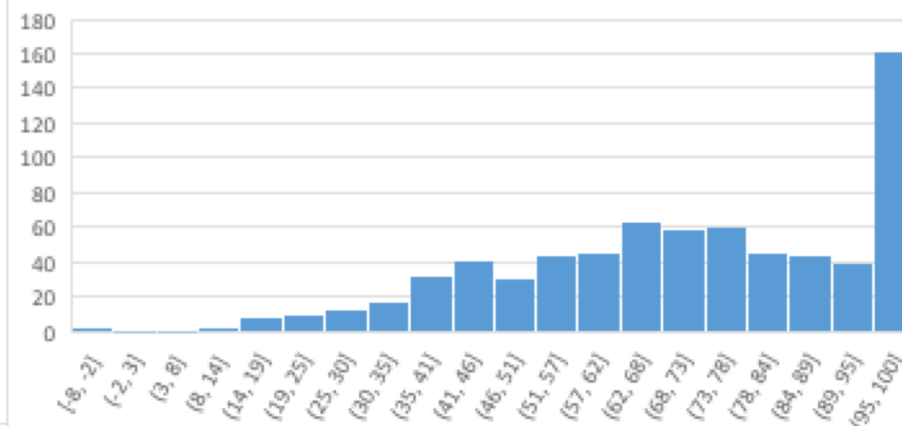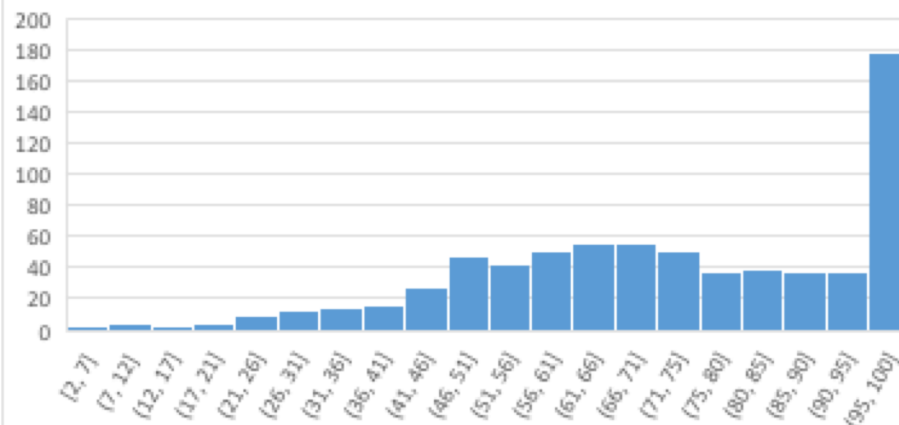2023 - HS Math Proficiency - All Students
15% Growth

Target: 57.17
Mean: 67.7
SD: 25.2

2028 - HS Math Proficiency - All Students
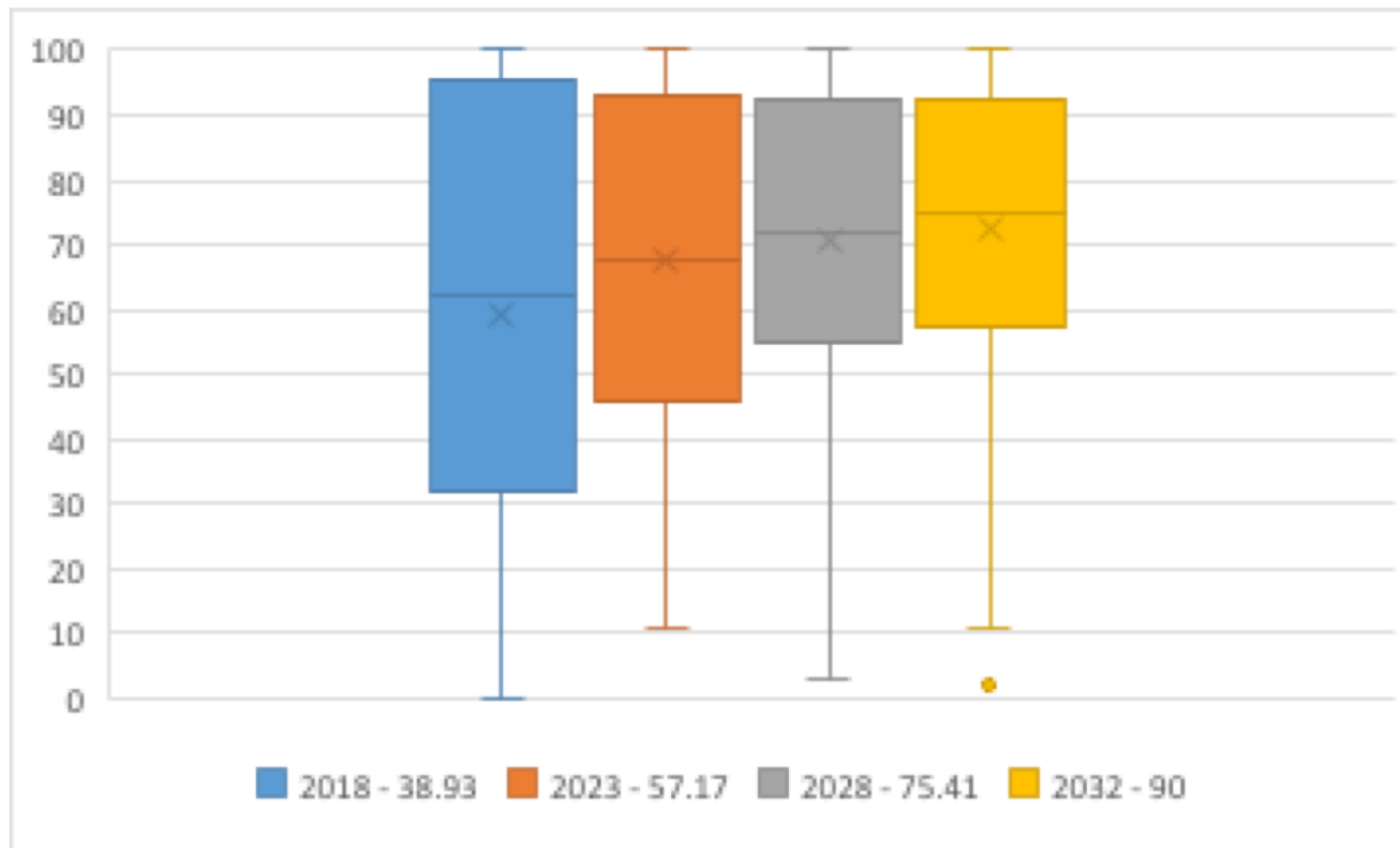30% Growth

Target: 75.41
Mean: 71.5
SD: 23.2

2032 - HS Math Proficiency - All Students
42% Growth

Target: 90
Mean: 72.3
SD: 22.4

High School Math – 3% Annual Growth

Legend: 2018 - 38.93 | 2023 - 57.17 | 2028 - 75.41 | 2032 - 90

Observations

- Currently, proficiency index distributions are negatively skewed (distribution peaks at higher values)

- Based on the modeling explored, those distributions will shift over time representing increasingly lower index values if improvement rates are generally less than 2% annually

- Depending on the starting distribution and progress rate, consistent annual improvement of 3% or more will maintain or improve the distribution of scores

Discussion

- What additional analyses does the TAC recommend to explore the issue?

- To the extent the distribution shifts, this will influence the effective weights. Does this suggest model adjustments are appropriate? If so, what type of adjustments may be warranted? When? How?

- Potential strategies:
  - Adjust indicator weights
  - Consider modifications to index calculations

- It is important to ensure model decisions are in keeping with ISBE's policy priorities