

Space Planning Like Google and Harvard

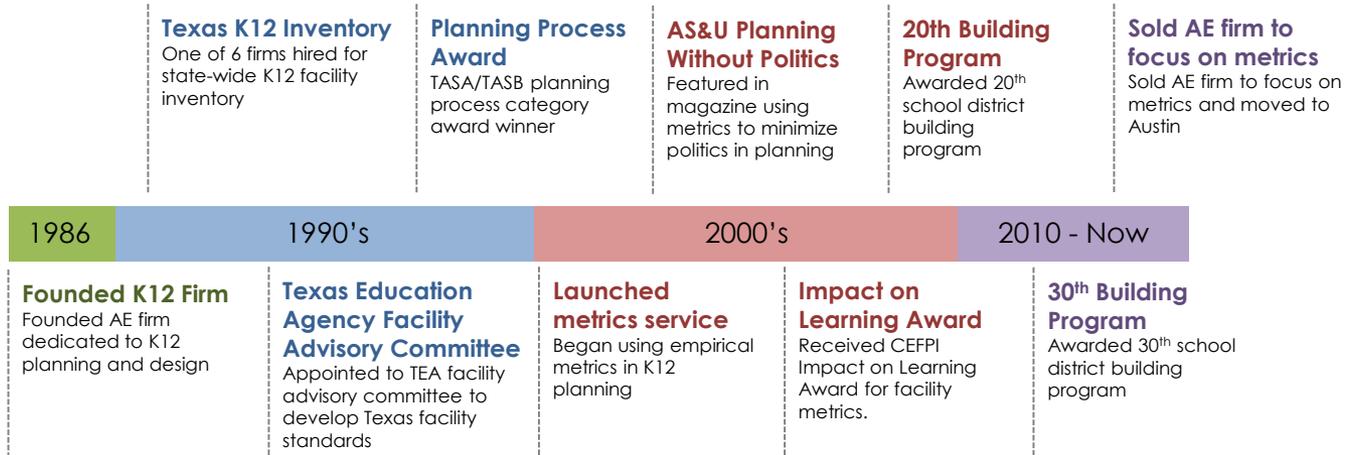


CEFPI Annual Conference 2014

presenter:

Monte Hunter

Monte Hunter AIA



- 30+ K12 planning and design programs
- Published in multiple magazines for facility metrics
- Multiple convention and conference metrics presentations
- CEFPI member for 23 years
- President of AE firm for 27 years
- Lives in Austin

What do these have in common?

Predictive Analytics

Apple

Ford

Google

Harvard

Honeywell

Major League Baseball

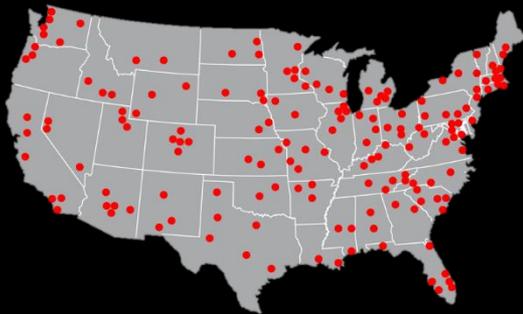
McDonalds

US Census

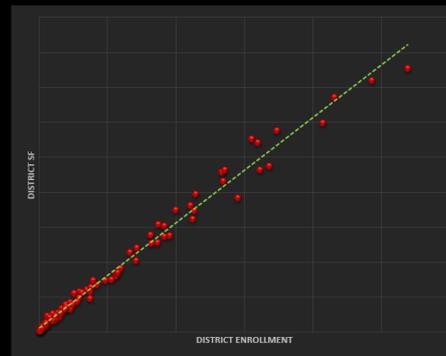
Discussion Items

- What is predictive analytics (PA)?
- Space planning with PA
- USA school space trends
- Other uses of PA in facility planning
- Wrap up

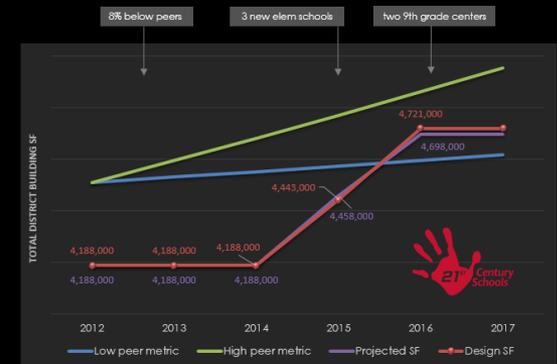
PA Process



data collection

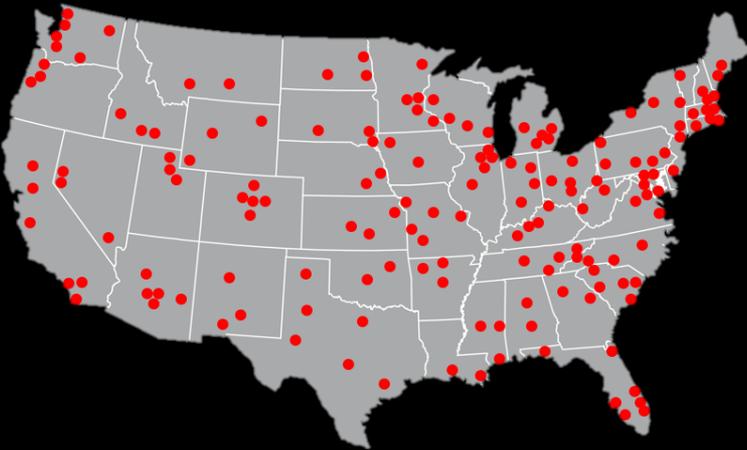


analysis & trends



metrics & modeling

Data & Validity



- 200+ USA school districts
- Districts with 500 – 200,000 enrollment
- District level correlation 95+
- Campus level correlation 80+
- Validated by PhD from University of Texas

H1N1 Vaccinations



Google Flu Trends

- Collect data from clinics
- Weeks to collect & analyze
- Flu already spread
- Often too late
- Analysis of flu search data
- Uses data to predict areas of need
- Real time results
- Improves in-time vaccine delivery

Harvard University

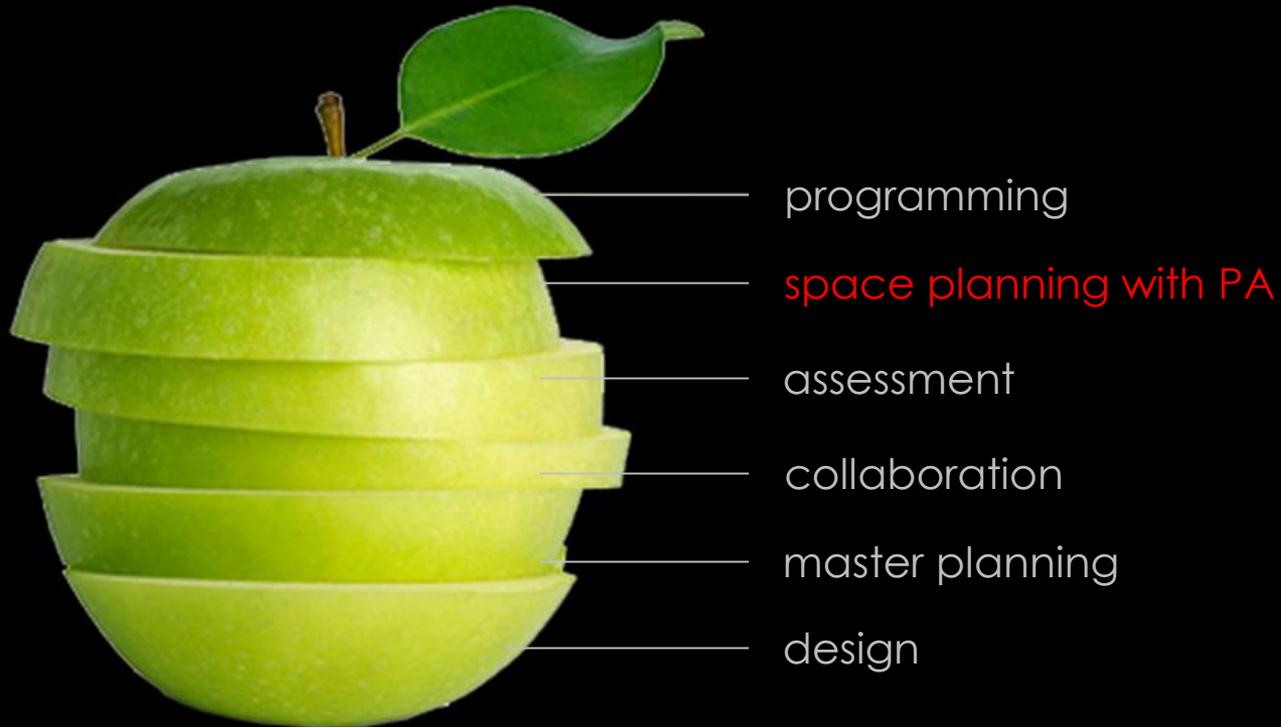


- Predictive analytics
- Student achievement
- Attendance
- Efficiency
- Teacher recruitment

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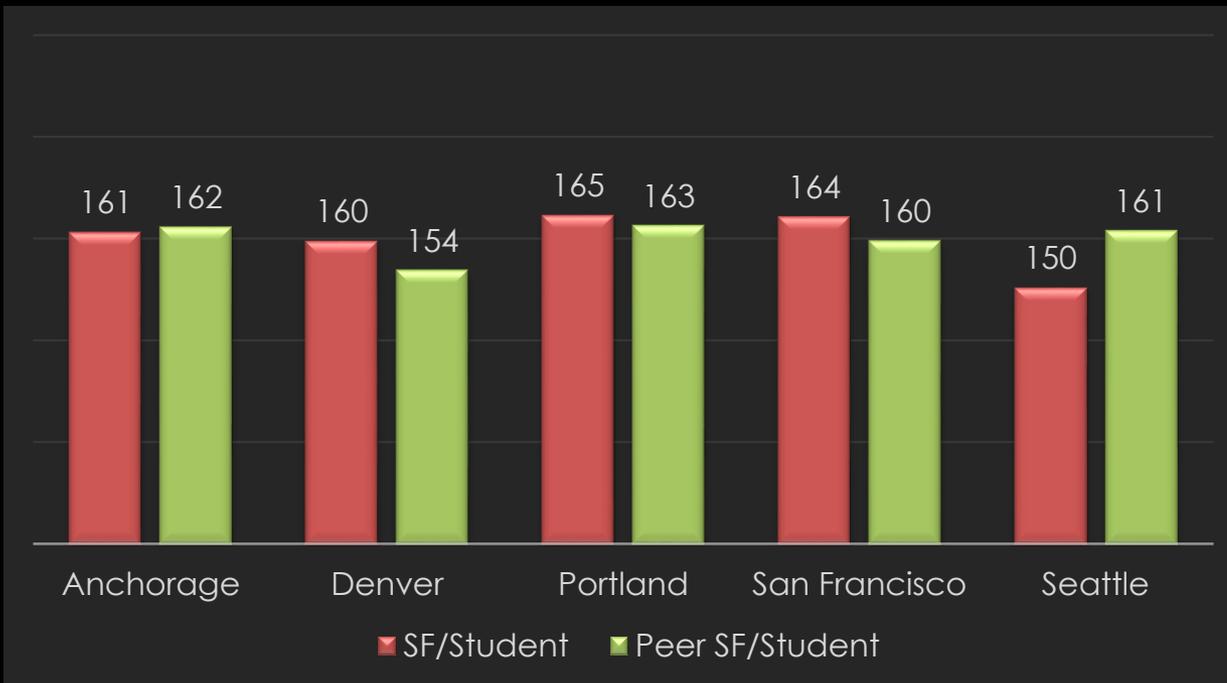
Space Planning Components



What PA can do

- Space guidance . . . district & campus level
- Space to be consistent with peers
- Space for emerging trends
- Results in days
- Conceptual scope before public events
- Collective practice of many districts & planners

SF per Student Metrics



- Regional peers
- If consistent with peers
- Scalable metric
- Not one-size-fits-all

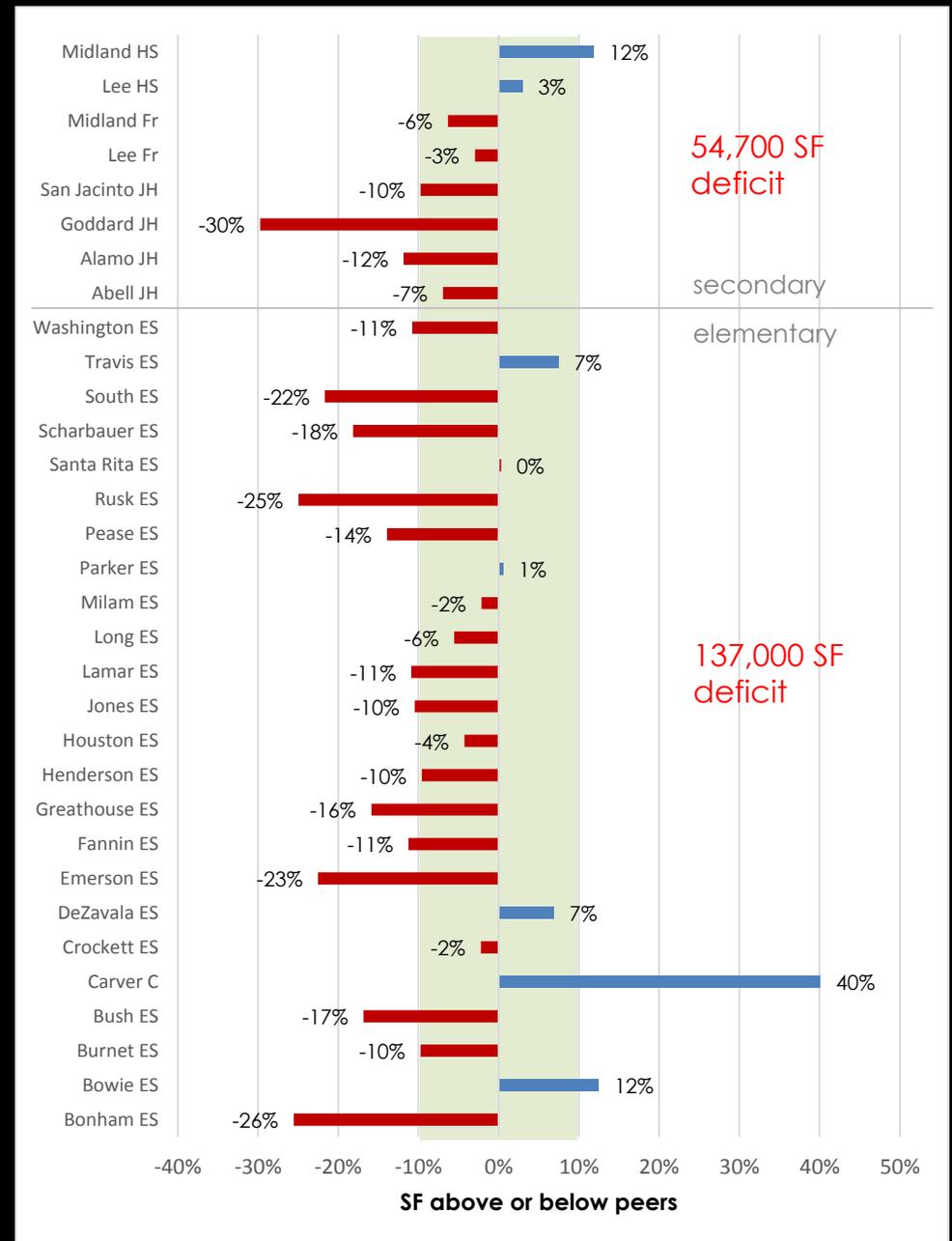
Total SqFt Metrics



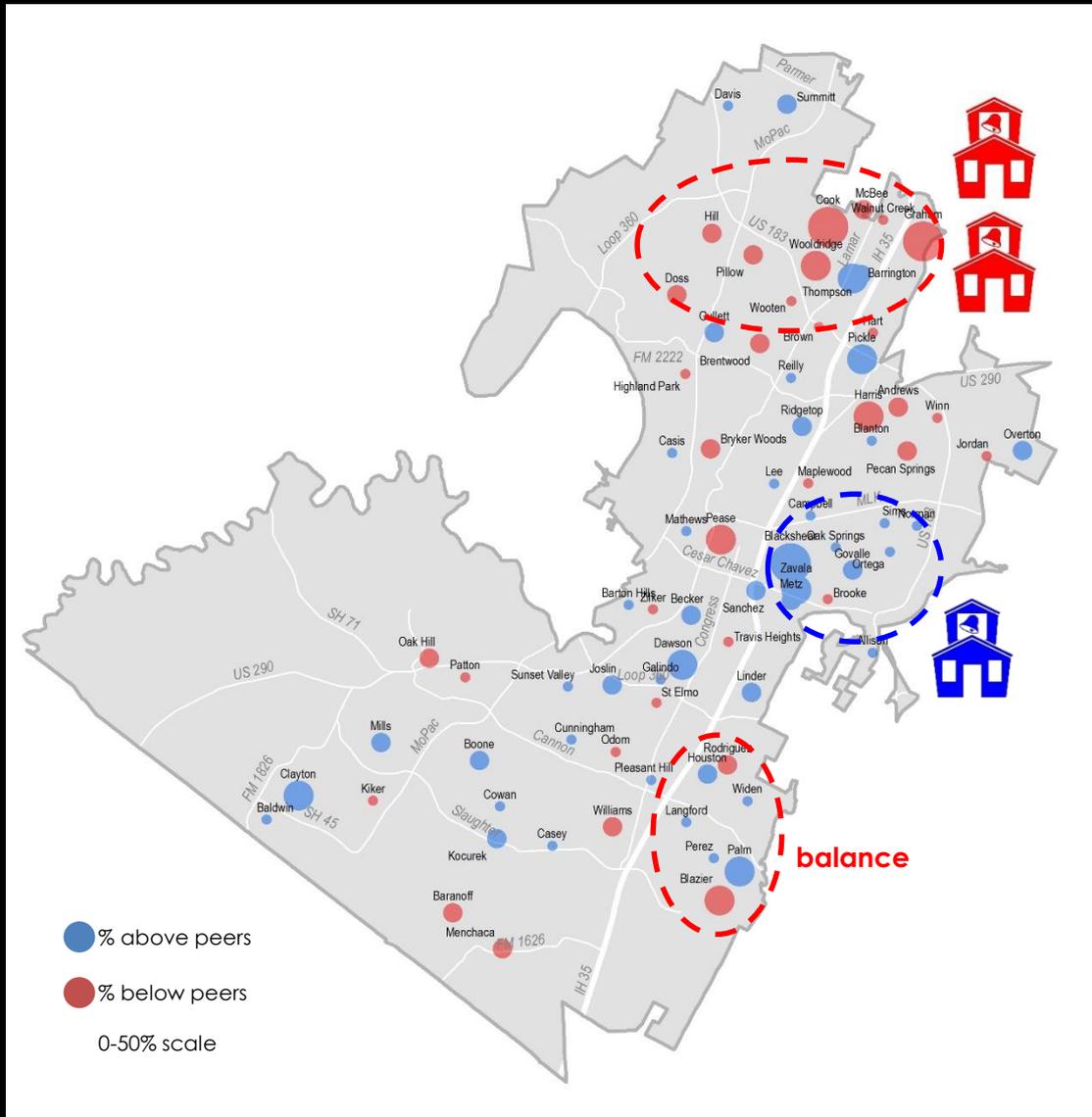
- If consistent with peers
- Macro benchmark
- Multiple benchmarks
- Justifies need

Campus Space Metric

- Wish list prioritization
- Facility equity
- Emerging programs
- Campus modifiers
- Justify space changes

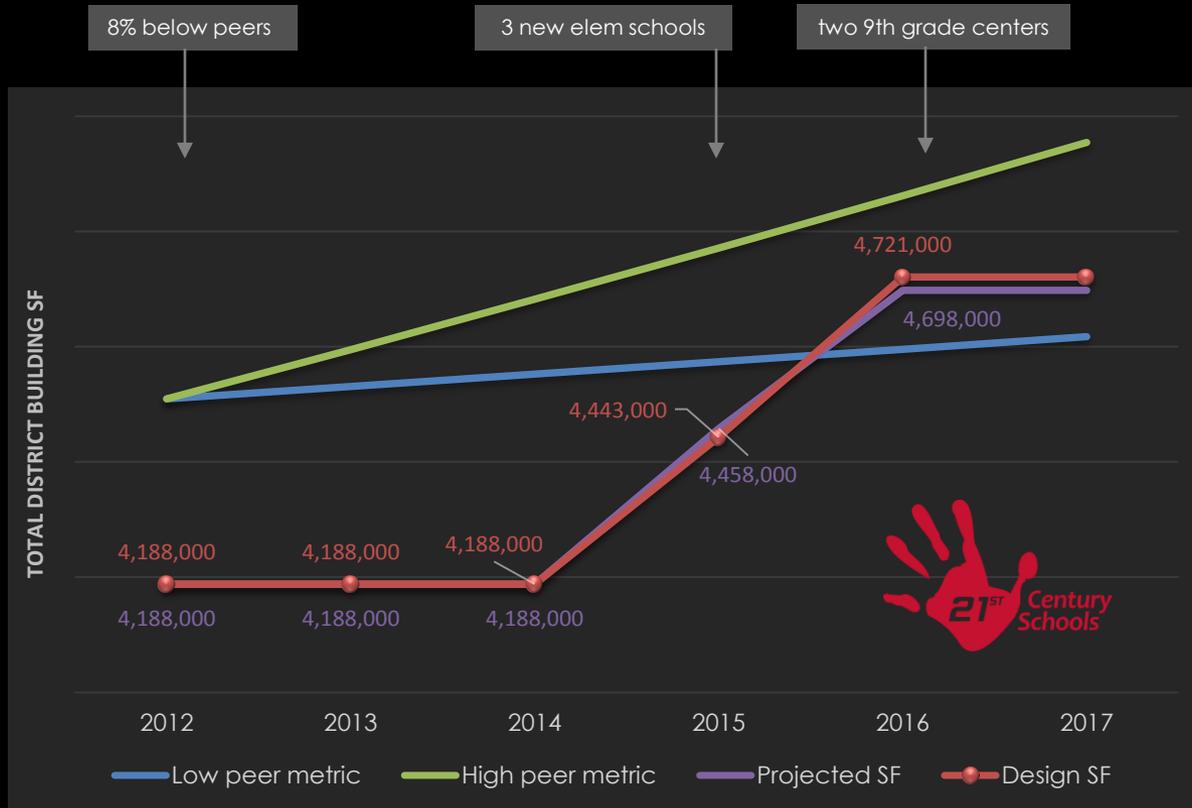


Campus SF Mapping - 2021



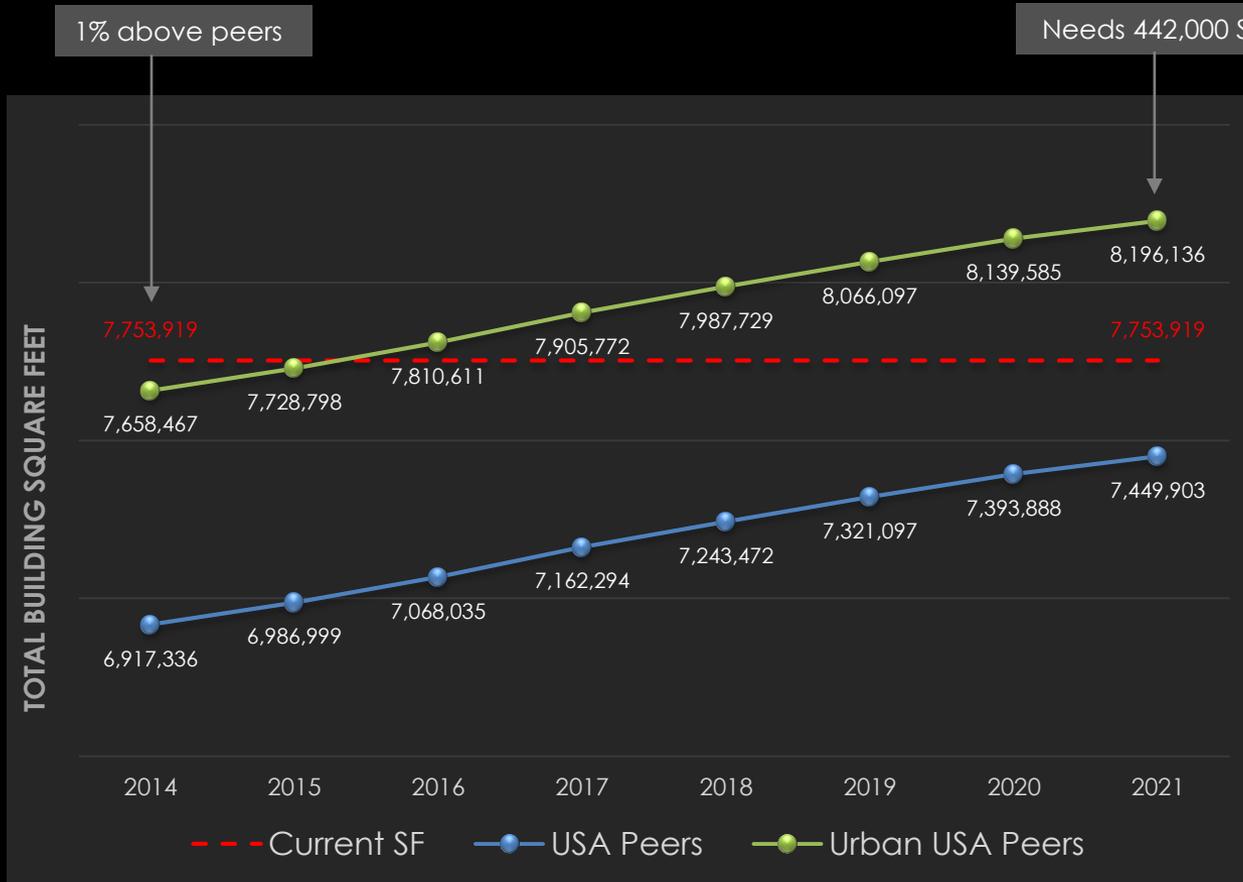
- PA & GIS
- Areas of need
- Identify trends
- Urban trend

Space Modeling



- Projects district SF
- Consistent with peers
- Tracks progress
- Demonstrates fiscal control
- Justifies needs

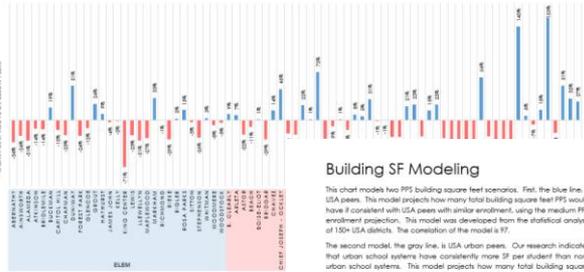
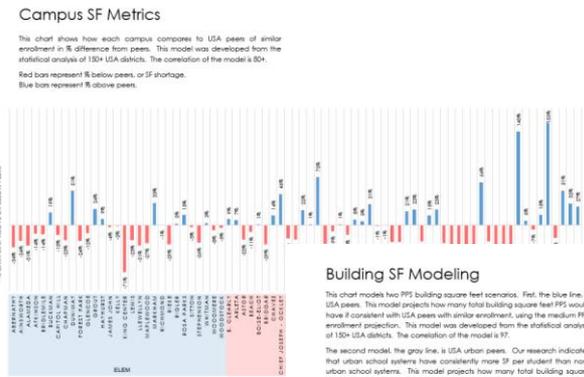
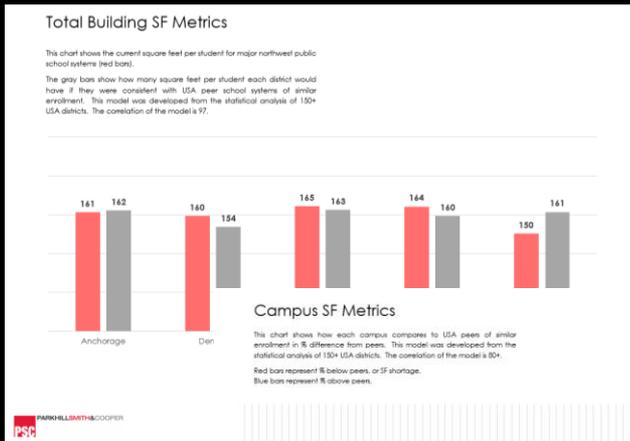
Space Modeling



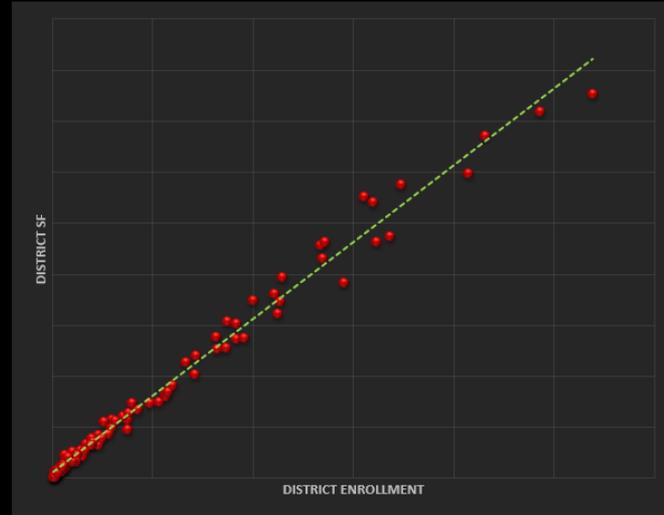
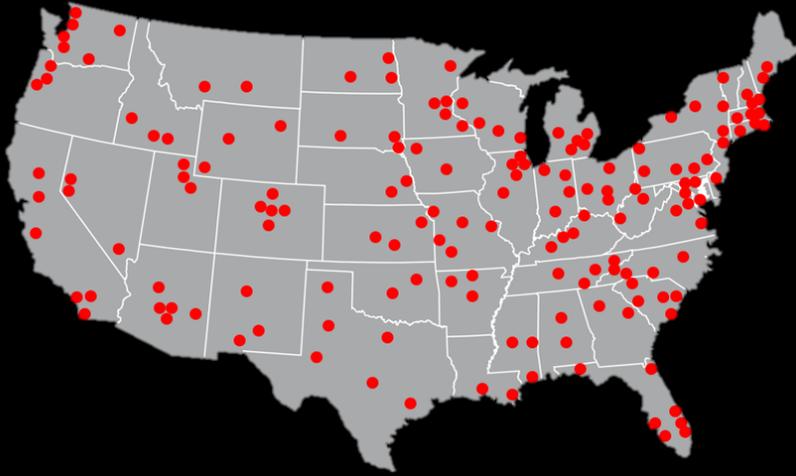
- Urban district
- Needs SF to keep up with peers
- Demonstrates fiscal control
- Justifies new SF

Results in Days

- Prior data collection & analysis
- Early scope definition
- Not a public event



Collective Practice of Many

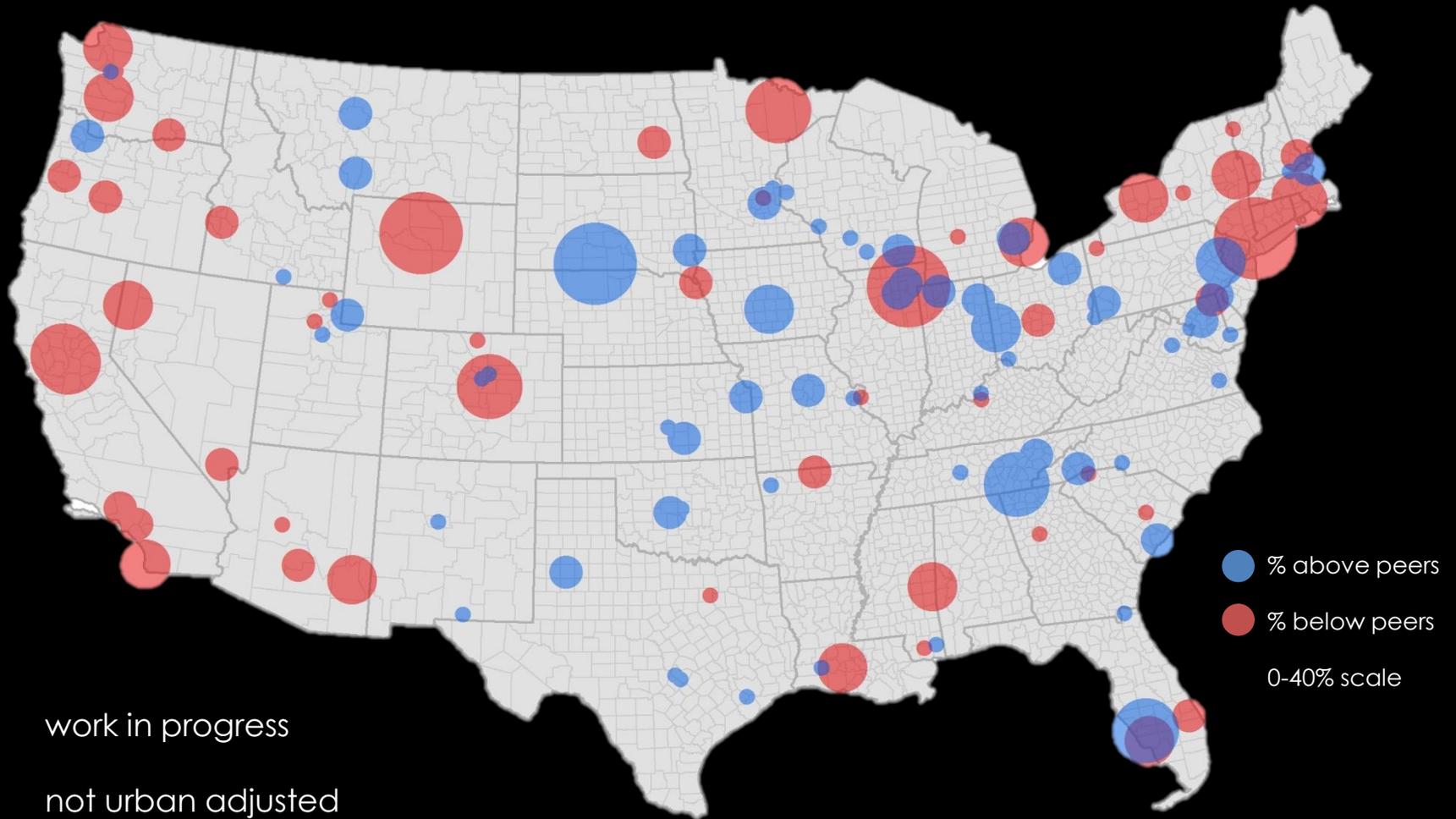


96% funding success rate

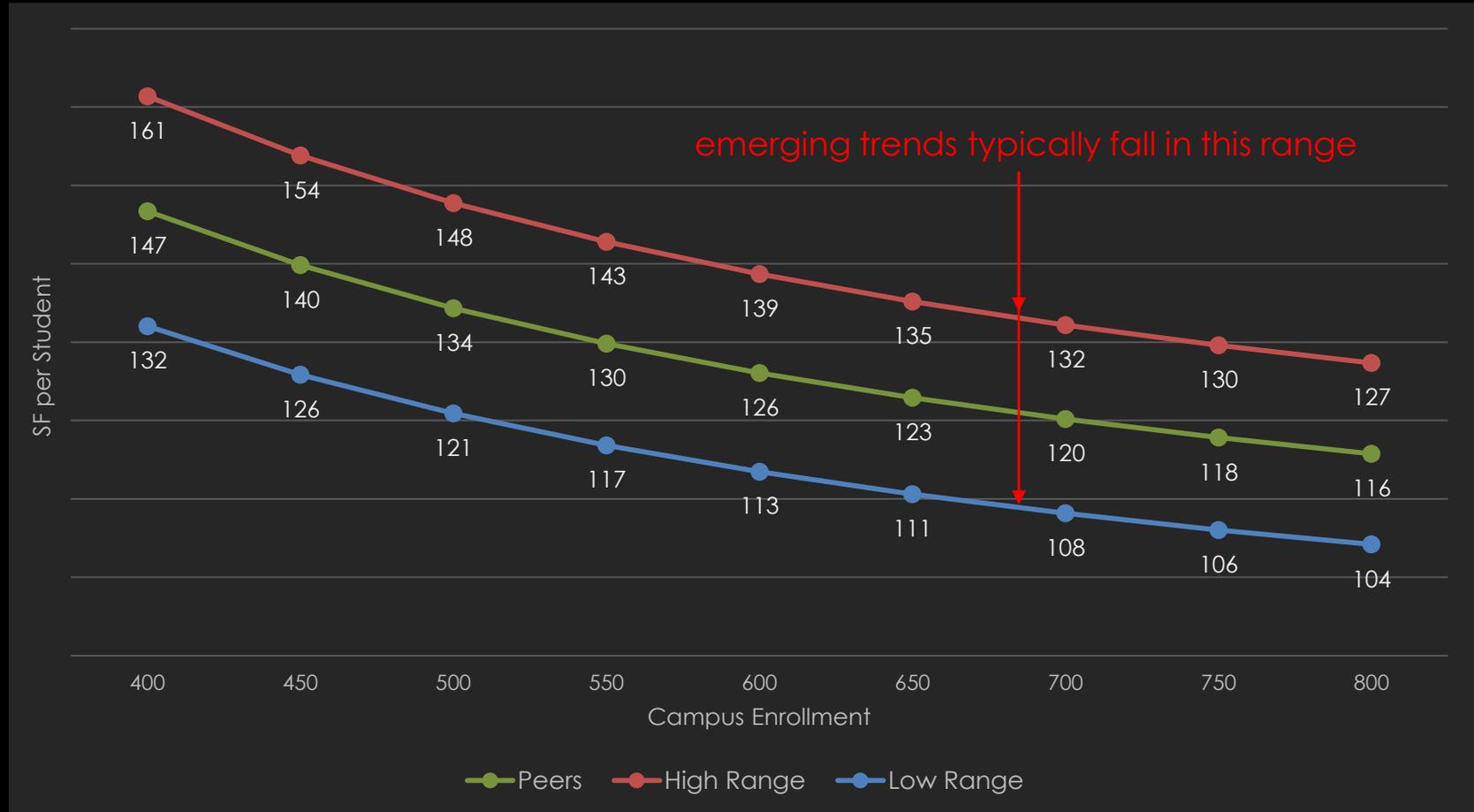
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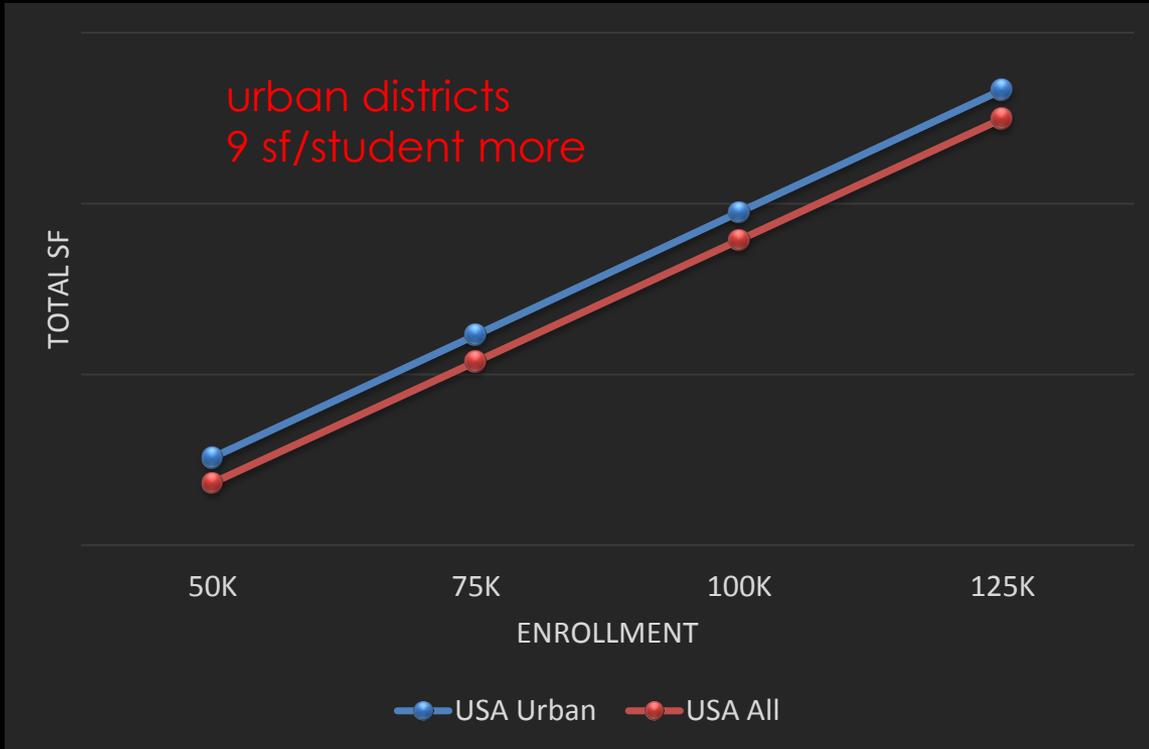
District SF vs USA Peers



Elementary SF/Student



Urban Factor



- USA urban vs all districts
- Statistical trend lines
- In 75K district = 8 elem schools



Discussion Items

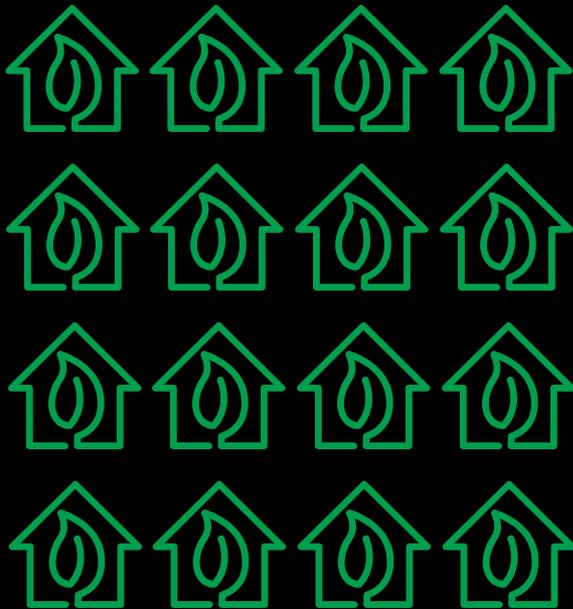
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Who uses space efficiency in sustainability efforts?

5% improvement in space efficiency for a high school

Save 90 pickups of construction waste

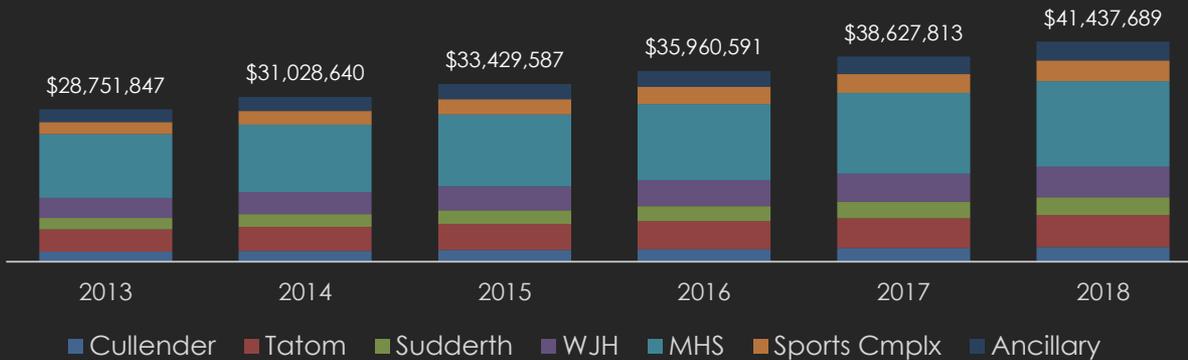
Heat and cool 16 houses



450,000 SF high school
2,000 sf house
4 lbs of waste per sf

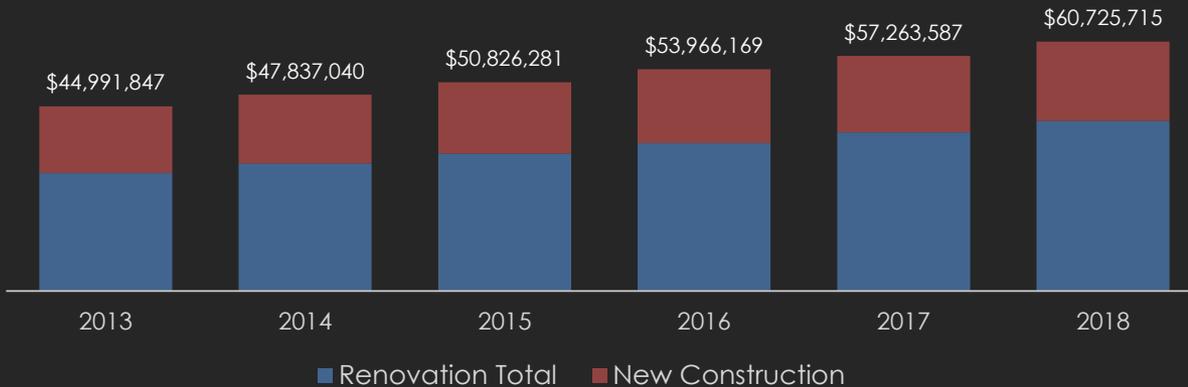
Capital Cost Projections

RENOVATION COST PROJECTIONS

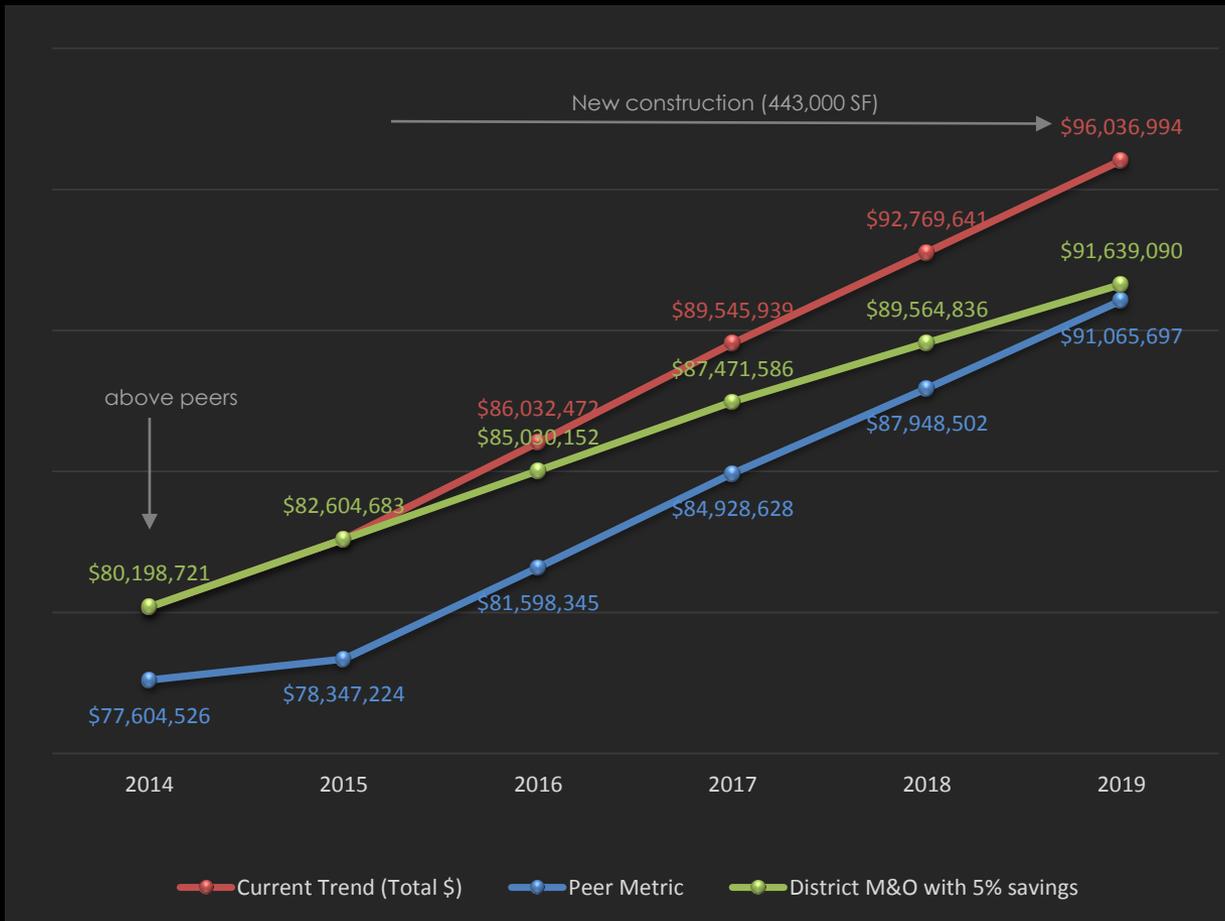


- Model renovation cost
- Model new space cost
- Cost to defer
- Patent pending

CAPITAL IMPROVEMENT PROJECTIONS

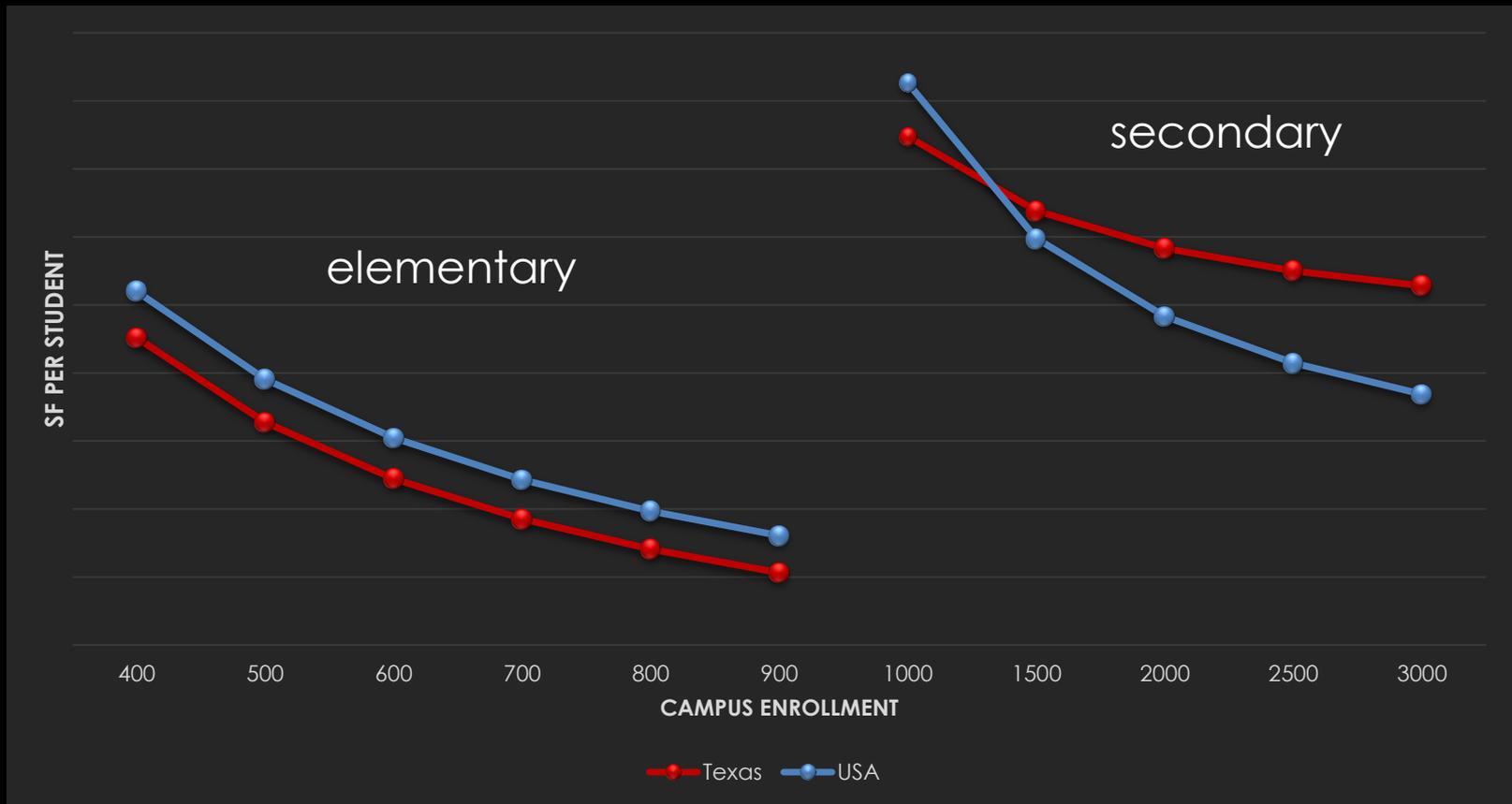


Facility M&O Modeling



- Models impact of facility expansion
- Efficiency targets
- Helps avoid moth balling new schools
- Excellent ROI

USA vs State Trends



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PA Benefits

- Peer-based guidance
- Collective practice of many
- Results in days
- Scope before public process
- Objective justification
- Facility equity
- Sustainability
- Funding success rate

PA is often resisted

A word cloud of terms related to resistance to change. The words are arranged in a roughly triangular shape, with 'change' at the top and 'control' at the bottom right. The words are in various colors: green, blue, and white. The words include: change, politics, different, tradition, unknown, funding, fear, and control.

Until . . .



a citizen asks about over-building

remember . . .

Apple

Ford

Google

Harvard

Honeywell

Major League Baseball

McDonalds

US Census

Questions?

Monte Hunter AIA

mhunter@team-psc.com