Integrated Planning For School and Community

Pitt County Schools Update 2010-11
Optimal Attendance Boundary Scenarios
July 1, 2010

Operations Research and Education Laboratory
Institute for Transportation Research and Education
Centennial Campus
North Carolina State University
Pitt County Schools:
2011-12 Reassignment Plan

June 7, 2010

In an attempt to help educate our community regarding the history and process utilized for student reassignment, the Board of Education approved the addition of a meeting on June 7, 2010 at 5:00 p.m.

Mike Miller, OREd Program Manager, will be present at this meeting to share information related to the process. OREd (Operations Research and Education Laboratory) is a part of the Institute for Transportation Research and Education at North Carolina State University.

July 1, 2010

Board workshop to present Exploratory Scenarios and discuss impact/concerns/questions

Workshop to include current Board of Education members, newly elected Board of Education members, representatives from Greenville Parents Association and Representatives from Coalition for Educating Black Children at table. Others may attend to observe.
Pitt County Schools: 2011-12 Reassignment Plan

June 7 Meeting

- Background
- Process
- Methodology
Optimization

• Operations Research techniques solve large-scale optimization problems involving many variables and constraints.

• The driving variable in the optimization algorithm is total distance traveled by students to school. The solutions generated by these OR techniques are optimal in the following way:

  the system-wide student travel distance is minimized while satisfying constraints imposed by building utilization and proficiency
Optimization and Scenario Review

- Scenarios generated by the optimization algorithm meet criteria defined for Proximity, Utilization, and Proficiency.

  ➤ Optimal scenarios are then reviewed on Planning Segment resolution for transportation/accessibility issues. Edits are tracked and impacted school data updated.

  ➤ Revised scenarios are further reviewed on parcel resolution. Edits are tracked and impacted school data updated.
Optimal Attendance Zones

Data-driven population projections

School building capacities

Proficiency index allowance

Optimization Algorithm

Optimal Attendance Zones
Optimization

Attendance Zone Scenario Objectives

- Proximity to school
- Building utilization
- Academic proficiency
- Impact Area

✦ Elementary Scenarios: Current Creekside, Eastern, Elmhurst, Falkland, Sugg/Bundy, Ridgewood, Sadie Saulter (closing 2011), South Greenville, WH Robinson, Wahl-Coates, and Wintergreen Prim/Inter districts

✦ Middle Scenarios: Current AG Cox, CM Eppes, and EB Aycock districts
### Proximity + Capacity Scenario

**Scenario ES 2**

<table>
<thead>
<tr>
<th>School</th>
<th>Projected Enrollment</th>
<th>Capacity (100%)</th>
<th>Proficiency Index</th>
<th>MS Feeders (MS 2)</th>
<th>American Indian / Alaskan Native</th>
<th>Asian / Pacific Islander</th>
<th>Hispanic</th>
<th>Black</th>
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<td>45%</td>
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<tr>
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**Scenario MS 2**

<table>
<thead>
<tr>
<th>School</th>
<th>Projected Enrollment</th>
<th>Capacity (100%)</th>
<th>Proficiency Index</th>
<th>HS Feeders</th>
<th>American Indian / Alaskan Native</th>
<th>Asian / Pacific Islander</th>
<th>Hispanic</th>
<th>Black</th>
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<td>41%</td>
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Pitt County Schools - 2010-11 IPSAC Elementary/Middle Reassignment Scenarios - Effective 2011-12

SCENARIO ES 2
Optimal attendance boundary scenario for Proximity + Capacity

Current Districts
All Districts 2009-15

Scenario Legend
- Not Impacted
- Ocracoke ES
- Eastern ES
- Elkmere ES
- Talbot ES
- HK Smith ES
- Bundy ES
- Fr viewer ES
- Stuarts Draft ES
- South Greenville ES
- SH Robinson ES
- Wash Coates ES
- Winterville ES
### Proximity + Capacity + Proficiency Scenario

#### Scenario ES 4

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<th>Capacity (100%)</th>
<th>Proficiency Index</th>
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#### Scenario MS 3

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<th>School</th>
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<th>Multi-Racial</th>
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<td>A G Cox Mid</td>
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<td>0%</td>
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<td>4%</td>
<td>56%</td>
<td>35%</td>
<td>3%</td>
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</tbody>
</table>
Connections….
Summary:

- **Proximity, Proficiency, and Utilization**
  - **Maximum Elem proficiency range:** 0.43 (impact area only; scenario ES 02)
  - **Maximum Mid proficiency range:** 0.28 (impact area only; scenario MS 02)
  - **Minimum Elem proficiency range:** 0.13 (impact area only; scenario ES 04)
  - **Minimum Mid proficiency range:** 0.05 (impact area only; scenario MS 03)
  - **Average Elem utilization:** 91% (impact area only)
  - **Average Mid utilization:** 93% (impact area only)

- **Feeder Pattern**
  - Elementary/Middle/High alignment

*Statistics based on 2009-10 geocode.*
Next Steps…

- **Proximity, Proficiency, and Utilization**
  - Target Proficiency Range?
- **Feeder Pattern**
  - Can be addressed in Scenario Review Cycle.
Scenario Review Cycle

Optimal Attendance Zones

Boundary Review

Track Edits & Update School Data
Optimizing and Reviewing Scenarios

Each edit can take a scenario farther from the optimal output.

It is essential to begin with optimal scenarios that reflect careful consideration of all reassignment parameters.
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