Transitioning to an Electric School Bus Fleet

Presented by
Agenda

- Key Funding Updates for Florida School Districts
- Takeaways and Lessons Learned from South Shore Clean Cities and Carmel Clay Schools
- Virtual Demonstration of the Blue Bird Type C Vision Electric Bus
- Q&A Session
Clean Cities

- National network of coordinators
- Peer-to-peer learning
- Problem solving
- Technical Response Service
- Tools, resources, publications
Florida Diesel Emissions Mitigation Program: $166 million share from VW Settlement Funding

<table>
<thead>
<tr>
<th>Eligible Mitigation Action</th>
<th>Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>School, Transit, and Shuttle Buses</td>
<td>70%</td>
</tr>
<tr>
<td>Light-Duty ZEV Supply Equipment</td>
<td>15% (Maximum Allowable)</td>
</tr>
<tr>
<td>Diesel Emissions Reduction Act (DERA)</td>
<td>15%</td>
</tr>
</tbody>
</table>
DERA: Rebates in addition to grants to reduce harmful emissions from older diesel vehicles

- **Eligible entities** include regional, state, or tribal agencies (school districts and municipalities); private school bus operators
- **Selection Process** lottery system, with at least one applicant selected from each state/territory
- **Eligible Old Diesel Buses for Replacement** Used to transport 10+ students; driven 10k or more miles; Class 3 – 8 diesel buses; powered by 2006 or older MY engines; engine and chassis must be scrapped before rebate payment
- **Eligible Replacement Buses** 2017 or newer MY engine; diesel/gasoline/battery electric/alternative fuels; rebate amount is $15k for replacement buses up to 19,500 lbs and $20k for buses 19,501 lbs or higher
SSCC -- headquartered in St. John, Indiana -- is a 501(c)(3) nonprofit organization.

Designated as the 71st Clean Cities coalition on June 15, 1999, SSCC is one of the U.S. DOE’s nearly 100 Clean Cities coalitions across the country.

In the last decade alone, South Shore Clean Cities members have reduced greenhouse gas emissions by 607,000 tons and displaced over 93 million GGE.
SSCC manages the Northern Indiana Green Fleet Program including fleets within the MACOG and NIRPC territories.

**Goal of the program:** To improve the environmental performance of public, private and nonprofit vehicle fleets in Northern Indiana.

SSCC currently guides over **170 municipal, county, school & university member fleets** to help mitigate barriers associated with sustainable transportation adoption while creating policies supporting vehicle emission & petroleum use reductions.
How does the Green Fleet program work?

• Educational opportunities including fuel & technology workshops, trainings & seminars

• Recognition & certification for fleet leaders taking steps to improve environmental performance & efficiency

• Branding & promotional tools to help fleets leverage earned certification status

• Informational resources including current technology options, market conditions, laws & incentives

• Connections with vendors offering sustainable transportation options

• Funding assistance with grant opportunities and other state and federal incentive programs

• Professional consultation including a Green Fleet audit and emissions quantification.
Green Fleet Audits

Step 1: South Shore Clean Cities staff will conduct a complete fleet analysis, including:

- Annual fuel usage
- Annual miles traveled & hours used
- Total number of vehicles & equipment
- Vehicle & equipment type, make & model
- Fuel type
- Average vehicle and equipment life
- Down time for fueling and maintenance
- Fuel cost
Step 2: South Shore Clean Cities staff then provides a complete fleet analysis in a written Green Fleet audit report, including:

• Cost comparisons for various sustainable fuel and vehicle types
• Availability and location of fueling options
• Personalized recommendations for short- and long-term fleet purchase plans
• Provide total cost of ownership and return on investment analysis
• Suggestions for implementing cost-saving programs & training such as idle reduction
• Information on potential funding opportunities to best leverage sustainable transportation investments
Our Process

• Route Identification
• Know the Bus Specs
  • Range, capacity, charging time, ask the experts
• Charging Station
  • Type, location, DCFC vs Level 2, costs
• Implementation
  • Storage, Fleet Telematics, Electrician
• Partnerships – Cummins, Blue Bird, MacAllister Transportation
Timeline

• May 2, 2019 – Introduced to Mr. Farrand, Grant Prep!
• June 17, 2019 – Grant Submitted
• July 23, 2019 – Award Notification
• July 24, 2019 – Prep for Delivery
• May 7, 2020 – First Electric School Bus Delivered in Indiana
• June 24, 2020 – Ribbon Cutting
• Currently – Scrapping of old bus and submit for reimbursement
When should I get started?

• NOW!!!
• Contact your local Clean Cities Organization
• Contact your Blue Bird Dealer
• Self Education, Become a Champion
• Be Ready Before RFP
Thank You!

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Director, Facilities & Transportation
Carmel Clay Schools
Facilities & Transportation

▪ Facilities
  ▪ Maintenance
  ▪ Custodial
  ▪ Facility Planning
  ▪ Capital Projects

▪ Transportation
  ▪ Pupil Transportation
  ▪ Fleet Management
## Facility Statistics

<table>
<thead>
<tr>
<th>School Buildings</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number</strong></td>
<td>15</td>
<td></td>
</tr>
<tr>
<td><strong>Total square feet</strong></td>
<td>2,721,434</td>
<td></td>
</tr>
<tr>
<td><strong>Building Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 – 10</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>11 – 15</td>
<td>3.3</td>
<td></td>
</tr>
<tr>
<td>16 – 20</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>21 – 35</td>
<td>7.6</td>
<td>(.3 = CHS)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Support Buildings</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number</strong></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>Total square feet</strong></td>
<td>88,730</td>
<td></td>
</tr>
<tr>
<td><strong>Acreage All Properties</strong></td>
<td>650</td>
<td></td>
</tr>
<tr>
<td><strong>Paved (Parking &amp; drives)</strong></td>
<td>89</td>
<td></td>
</tr>
<tr>
<td><strong>Mowable</strong></td>
<td>377</td>
<td></td>
</tr>
<tr>
<td><strong>Facility Maintenance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Custodial staff</td>
<td>114</td>
<td></td>
</tr>
<tr>
<td>Maintenance staff</td>
<td>17</td>
<td></td>
</tr>
</tbody>
</table>
## Fleet Statistics

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total school buses in fleet</td>
<td>188</td>
</tr>
<tr>
<td>Daily route buses</td>
<td>163</td>
</tr>
<tr>
<td>Activity buses</td>
<td>4</td>
</tr>
<tr>
<td>Annual miles</td>
<td>Over 1.5 million</td>
</tr>
<tr>
<td>Replacement cycle</td>
<td>12 years</td>
</tr>
<tr>
<td>LPG buses in fleet</td>
<td>24</td>
</tr>
</tbody>
</table>

CCS will be adding an electric powered neighborhood bus for the 2020-2021 school year as a pilot project. The purchase is being partially funded by a grant awarded through the 2019 Indiana Volkswagen Environmental Mitigation Trust Program.
<table>
<thead>
<tr>
<th><strong>Regular Education Students</strong></th>
<th><strong>Special Needs/Early Childhood Students</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average ridership of eligible students</td>
<td>70%</td>
</tr>
<tr>
<td>Typical bus rated seating capacity</td>
<td>81 to 84</td>
</tr>
<tr>
<td>Typical bus functional seating capacity</td>
<td>54</td>
</tr>
<tr>
<td>Average number riders per bus</td>
<td>43</td>
</tr>
<tr>
<td>Utilization per functional capacity</td>
<td>80%</td>
</tr>
<tr>
<td>Walk to stop distance</td>
<td>80% &lt; .01 mi</td>
</tr>
<tr>
<td>Ride time</td>
<td>75% &lt; 20 min.</td>
</tr>
<tr>
<td>Total bus stops all students</td>
<td>4100+</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Average ridership of eligible students</td>
<td>80%</td>
</tr>
<tr>
<td>Average bus rated seating capacity</td>
<td>48</td>
</tr>
<tr>
<td>Average bus functional seating capacity</td>
<td>32</td>
</tr>
<tr>
<td>Average number riders per bus</td>
<td>6</td>
</tr>
<tr>
<td>Utilization per functional capacity</td>
<td>18%</td>
</tr>
</tbody>
</table>
## Carmel Clay Schools: EV 1

### EV 1 STATS

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposed Route</td>
<td>45 Miles</td>
</tr>
<tr>
<td>Est. Annual Miles</td>
<td>8,000</td>
</tr>
<tr>
<td>Range</td>
<td>120 Miles</td>
</tr>
<tr>
<td>Capacity</td>
<td>84</td>
</tr>
<tr>
<td>Batteries</td>
<td>155kW Li-Ion NMC/G Cell</td>
</tr>
<tr>
<td>Propulsion System</td>
<td>Cummins PowerDrive 7000</td>
</tr>
<tr>
<td>Motor</td>
<td>TM4 SUMO</td>
</tr>
<tr>
<td>Charging Station</td>
<td>Level 2</td>
</tr>
<tr>
<td>Charging Station</td>
<td>(2) Clipper Creek CS-100</td>
</tr>
</tbody>
</table>
Project Partners

MacAllister Transportation
Cummins
South Shore Clean Cities
School Administration
Thank you
TAMPA BAY AND SOUTH SHORE CLEAN CITIES PRESENT

TRANSITIONING TO AN ELECTRIC SCHOOL BUS FLEET

AUGUST 4, 2020
3pm ET / 2pm CT

CLEAN CITIES PARTNERS

FLORIDA TRANSPORTATION SYSTEMS

OVER 20,000 ALT FUEL SCHOOL BUSES

OVER 900 SCHOOL DISTRICTS

POWERED BY PROPANE

POWERED BY GASOLINE

POWERED BY CNG

POWERED BY ELECTRICITY
Built by names you know and trust

Blue Bird, the name synonymous with student transportation, has united with Cummins, a global leader in electrified power solutions, to deliver the next step in electric vehicle technology to your school district.

Make the most of your electric school bus grant dollars by moving forward with the team you know. We’ll make the shift as straightforward as possible.

The road ahead is the dream ahead

Introducing the all-electric school bus fleet from Blue Bird, powered by Cummins. With zero emissions and substantially lower maintenance costs, this fleet is built to transport dreams.
Blue Bird Electric School Bus
Q&A Panel

Ryan Lisek
Project Manager
South Shore Clean Cities

Ron Farrand, Jr.
Director of Facilities and Transportation
Carmel Clay Schools

Christopher Rustman
President
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