Aggregated Alternative Technology Alliance
Grant Number: EE-0007462

FINAL REPORT

TO: U.S. DEPARTMENT OF ENERGY
Clean Cities Program

CFDA Number: 81.086

Submitted by:

National Association of Regional Councils
660 North Capitol Street NW
Suite 440
Washington, DC 20001
Tel: 202.986.1032

Grant Administrator: Leslie Wollack, Executive Director

December 2018
## Fleets for the Future Partners

### National Association of Regional Councils, Grantee

<table>
<thead>
<tr>
<th>Regional Council Partners</th>
<th>Clean Cities Coalitions</th>
<th>Industry and Technical Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-America Regional Council, Kansas City, Missouri</td>
<td>Metropolitan Energy Center/ KC Regional Clean Cities</td>
<td>The Cadmus Group</td>
</tr>
<tr>
<td>Metropolitan Washington COG, Washington, DC</td>
<td>Clean Communities of Central New York</td>
<td>Electrification Coalition</td>
</tr>
<tr>
<td>Metropolitan Area Planning Council, Boston, MA</td>
<td>Dallas-Fort Worth Clean Cities Coalition</td>
<td>Yborra &amp; Associates, LLC</td>
</tr>
<tr>
<td>North Central Texas COG, Dallas/Fort Worth, Texas</td>
<td>Greater Washington Region Clean Cities Coalition</td>
<td>ICM, Inc.</td>
</tr>
<tr>
<td>Pima Association of Governments, Tucson, Arizona</td>
<td>Massachusetts Clean Cities Coalition</td>
<td>Propane Education &amp; Research Council</td>
</tr>
<tr>
<td></td>
<td>Tucson Regional Clean Cities Coalition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Utah Clean Cities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Western Washington Clean Cities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clean Fuels Ohio</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Triangle Clean Cities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Centralina Clean Fuels Coalition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tulsa Clean Cities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Southeast Louisiana Clean Fuel Partnership</td>
<td></td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

**EXECUTIVE SUMMARY** ........................................................... 5  
"Anticipated Impacts" .................................................................... 5  
"Outcomes" ................................................................................... 6  
"Conclusion" ................................................................................. 7  

**BACKGROUND** ........................................................................ 8  
"National Partners" ...................................................................... 8  

**F4F ORIGINAL WORKPLAN** ....................................................... 9  

**ADVANTAGES OF COOPERATIVE PROCUREMENT** ............ 11  
"Regional Procurement Initiatives" .................................................. 12  
"Clean Cities Coalitions" ................................................................. 12  
"National Procurement Initiative" .................................................... 13  

**REGIONAL COLLABORATIVE PROCUREMENTS** .......... 14  
"Introduction" ............................................................................... 14  
"Greater Kansas City Region" ......................................................... 14  
Background ...................................................................................... 15  
"Metropolitan Kansas City Regional Cooperative Procurement AFV Pilot Program" ........................................................................................................... 15  
"Consumer Electric Vehicle Group Purchase Program" .................. 18  
"Greater Boston Region - Metropolitan Area Planning Council" ........ 20  
"Metropolitan Washington Region - Metropolitan Washington Council of Governments" ................................................................................................ 22  
"Greater Tucson Region - Pima Association of Governments" ........ 24
NATIONAL PROCUREMENT INITIATIVE ................................. 28

Background .................................................................................. 28

1. Research/Engagement ................................................................. 28
2. Requirement Identification .......................................................... 29
3. Market Analysis .......................................................................... 30
4. Bid Execution ............................................................................. 30
5. Award and Contracts ................................................................. 31
6. Contract Promotion .................................................................. 31
7. Evaluation ................................................................................ 32

National Results ............................................................................ 32

Private Aggregation Procurement Efforts ........................................ 35

COMMUNICATIONS: OUTREACH AND EDUCATION .......... 35

Highlights from Education and Outreach Efforts ......................... 35

PROJECT DELIVERABLE: PRODUCTS AND RESOURCES ... 38

Best Practice Guides .................................................................... 38

Other products and resources ....................................................... 43

MAJOR FINDINGS/LESSONS LEARNED ............................. 43

Lessons Learned .......................................................................... 43

Universal Lessons ......................................................................... 44

Lessons Specific to Implementing Regional Procurements .......... 46

CONCLUSION/IMPACT ............................................................... 48

Project Sustainability ..................................................................... 48

APPENDIX ..................................................................................... 49
EXECUTIVE SUMMARY

Fleets for the Future (F4F), led by National Association of Regional Councils (NARC), was a national partnership of five regional councils, thirteen Clean Cities Coalitions, and five industry and technical advisors (partners are listed on the reverse side of cover page). With their various extended networks and relationships, all the project partners were able to work in unison to consolidate bulk orders of alternative fuel vehicles (AFVs) and infrastructure regionally and nationwide. They were also able to reduce incremental costs and disseminate best practices on application, usage, and procurement strategies for the selected vehicles and related infrastructure.

The Fleets for the Future's (F4F) stated goal – achieve nationwide economies of scale for AFVs through aggregated procurement initiatives – has been realized with strong results. In addition to achieving the goals above, the F4F team was able to:

- build broad awareness of the AFV options available through public procurement;
- create multiple levels of aggregated procurement methods for a significant number of AFVs through five regional cooperative purchasing programs and one public/nonprofit national-scale procurement;
- document lower transaction and administrative costs; and
- achieve better fleet level pricing in many instances.

Anticipated Impacts

The key outcome of F4F was to produce economies of scale by reducing transactions and administrative costs associated with purchasing alternative fuel vehicles through the implementation of regional and national aggregation methods. The five best practices guides, the 7-step strategic procurement process, and the national procurement plan provided the needed framework to launch the various cooperative purchasing initiatives. The expected impacts of the F4F initiative are illustrated in the table below:

<table>
<thead>
<tr>
<th>IMPACTS</th>
<th>Procurement best practices, templates</th>
<th>Outreach and education</th>
<th>Successful cooperative procurement projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replicable templates for varying set of situations</td>
<td>Consistent messaging</td>
<td>Aggregation of AFV contracts</td>
<td></td>
</tr>
<tr>
<td>Easy guides to follow for implementation</td>
<td>Broader and wide-spread outreach networks</td>
<td>Lower transactional and administrative costs</td>
<td></td>
</tr>
<tr>
<td>Provision of background and informational materials for consideration</td>
<td>Higher visibility of alternative fuel and advanced technology vehicles</td>
<td>Increase in the number of AFVs available for purchase</td>
<td></td>
</tr>
<tr>
<td>Ease of including AFVs for cooperative procurement</td>
<td>Documentation of total cost of ownership considerations</td>
<td>Better pricing for basic vehicle builds</td>
<td></td>
</tr>
</tbody>
</table>
Outcomes

Project Reach Results

- Five regional procurement initiatives covering 9 states and the District of Columbia.
- Project population coverage: 61 million residents in 5 metro regions.
- One national-scale public procurement initiative with open, free membership (over 50,000 members) covering all 50 states.
- Thirteen Clean Cities Coalitions providing education and outreach within 16 states.
- Direct outreach and stakeholder engagement reaching 636,663 individuals.

Procurement Results

- Greater Kansas City pilot procurement – Their procurement process included 44 vehicle builds in eight classes. Multiple AFV options were received on 35 of the 44 options. In 2017, $150,000 in administrative costs were saved as the result of 29 agencies purchasing 445 vehicles; 13.5 percent of the total vehicles purchased were AFVs, representing Flex Fuel E-85, Hybrid EVs and Compressed Natural Gas (CNG) vehicles. They also successfully hosted two EV group-buy programs.
- Greater Boston – The Green Mobility Group Purchasing Program included 11 vendors offering clean vehicle technologies available to public entities in Massachusetts and nationwide. Four public fleets received discounts of 11-19 percent off their purchase orders by participating in the pilot round of the Green Mobility Group Purchasing Program – producing over $54,000 in cumulative savings for the participating fleets. In 2018, they held a second round focusing on electric vehicle charging stations and can provide participating communities approximately $27,000 in cumulative savings.
- Greater Tucson – They are continuing to assist school districts in the procurement of alternative fuel school buses and infrastructure.
- Mid-Atlantic – They made sixteen vehicle types available for purchase, with pricing held for one year and two one-year renewal options. Infrastructure options will become available after F4F grant period concludes.
- Dallas/Ft. Worth – Through their soft commitment form, the staff received requests for procurement of over 70 alternative fuel vehicles. They created landing pages consolidating existing alternative fuel contracts by fuel type on the North Texas SHARE website. The landing pages streamlined the availability of alternative fuel fleet procurement opportunities to any regional fleet with an interlocal agreement with North Texas SHARE.
- The National Procurement Project – through the National Joint Powers Alliance (NJPA), now Sourcewell – helped cement 23 vendors offering AFV/infrastructure; 15,291 new Sourcewell members; 5 new electric vehicle supply equipment (EVSE) contracts; and 4 new fleet management services contracts.
Communication Education and Outreach Results

- Twitter page and website views: 44,142
- Webinars: 65
- In-person events: 788
- Emails and newsletters sent: 407,190

Strategies – Results

- Five best practices guides were published to assist regional procurement projects.
- 7-step Strategic Procurement Framework was created to assist regional procurement projects.
- National plan developed that led to partnership with Sourcewell.
- The project provided sustainability of AFVs options available in public procurement processes in five regions as well as nationally.
- There is potential for F4F inclusion in future Clean Cities Coalitions work plans.

Benefits of Regional and National Public Procurements

Cooperative procurement has become a well-established practice in the past two decades with increasing representation and participation by public entities. Continued collaborative efforts to support cooperative procurement have further enhanced large national consortiums as well as more local, regional cooperative programs. The proven benefits of using a cooperative procurement approach are numerous. Cooperative purchasing is competitive, convenient, flexible, compliant, and insightful.

In recent years, public sector procurement departments have seen a steady reduction of staff and, as a result, have become more dependent on cooperative purchasing solutions. While there continues to be a strong preference in public organizations to do business with local dealerships and support industries, regional cooperatives procurement programs have created their processes to serve these preferences. The level of the initial price discount may be minimized because of local preferences, although by considering the total cost of ownership (capital and maintenance), the local procurement can demonstrate solid cost savings. This finding has been illustrated through F4F regional procurement efforts.

National cooperative procurement programs provide expanded levels of opportunities for public and nonprofit fleet managers with a larger selection of vehicle options as well as advantageous pricing. The F4F partnership with Sourcewell showcased national contracts negotiated directly with the original equipment manufacturer (OEM) and supply chain manufacturers achieving competitive volume pricing for an extensive list of AFVs and fueling infrastructure. The advantageous economies of scale are most often seen at the national level.

Conclusion

The Fleets for the Future initiative saw advancements made in alternative fuel and advanced vehicle technology markets through its work to improve and enhance public aggregated procurement processes. As the F4F grant ends, there are a large number and a wide-variety of alternative fuel vehicle options available in most all vehicle classes – where there were significantly fewer AFVs options available in regional and national cooperative purchasing programs in 2016.
**BACKGROUND**

Government agencies and their constituents can benefit greatly from replacing conventional vehicles with alternative fuel vehicles (AFVs), and numerous jurisdictions and states have set ambitious goals for AFV deployment. AFVs including electric vehicles (EVs), propane autogas vehicles, and compressed natural gas (CNG) vehicles are becoming increasingly cost effective for government fleets. However, AFV deployment has been hindered by challenges including the need to justify higher upfront costs, the lack of widespread technical knowledge that could enable appropriate specification of AFV options, the need to obtain sufficient refueling infrastructure and adopt new maintenance practices, and limited time available to capacity-constrained fleet staff as they evaluate vehicle procurement options. As such, the status quo has tended to prevail for fleets that lack the mandate or resources to adopt AFV purchasing strategies.

Funded by the U.S. Department of Energy (DOE) Clean Cities Program, the Aggregated Alternative Technology Alliance, known as “Fleets for the Future” (F4F), sought to achieve nationwide economies of scale for alternative fuel vehicles (AFVs) through aggregated procurement initiatives. F4F strove to accomplish these economies of scale through a coordinated strategy designed to increase knowledge, lower the transaction costs of procurement, achieve better pricing, and address potential challenges arising from large-scale procurement initiatives, thereby increasing the deployment of alternative fuel vehicles in public and private sector fleets.

**National Partners**

Led by the National Association of Regional Councils (NARC), F4F was comprised of five regional councils of government (known as RCs or COGS), thirteen Clean Cities Coalitions (CCCs), and five industry and technical advisors. With their various extended networks and relationships, all the project partners worked in unison to consolidate bulk orders of alternative fuel vehicles (AFVs) and infrastructure regionally and nationwide.

The full listing of F4F partners are in the table below:

<table>
<thead>
<tr>
<th>Table 1: F4F Project Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regional Council Partners</strong></td>
</tr>
<tr>
<td>Mid-America Regional Council, Kansas City, Missouri</td>
</tr>
<tr>
<td>Metropolitan Washington COG, Washington, DC</td>
</tr>
<tr>
<td>Metropolitan Area Planning Council, Boston, MA</td>
</tr>
</tbody>
</table>
F4F ORIGINAL WORKPLAN

As stated above, the Fleets for the Future project goal – to achieve nationwide economies of scale for alternative fuel vehicles (AFVs) through aggregated procurement initiatives – was written in the grant application through an implementation strategy that included four measurable approaches/final objectives:

<table>
<thead>
<tr>
<th>#</th>
<th>Approach/Final Objectives</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Build project foundation, accountability protocols, and communications strategies.</td>
<td>The establishment of programmatic and administrative protocols that include financial and activity monitoring, and verification of goals and objectives attainment for the purpose of grant reporting. Establish communications, outreach, and stakeholder engagement strategies.</td>
</tr>
<tr>
<td>2.</td>
<td>Create replicable procurement best practices, templates, and outreach and educational campaigns.</td>
<td>F4F partners will lead the creation of best practices and templates for replication by state, regional, and local governments. NARC, RCs, and CCCs – through workshops, websites, webinars, social media networks and technical assistance – will disseminate information designed to educate state, regional, and local governments, as well as other potential customers about the procurement opportunities generated through F4F and the creation of replicable and tailorable best practices.</td>
</tr>
<tr>
<td>3.</td>
<td>Design and deploy large-scale regional procurement initiatives.</td>
<td>The regional initiatives will develop and implement a procurement process that meets the needs and legal requirements of the participating jurisdictions. Each regional lead will be equipped with best practices, templates, and one-on-one technical assistance.</td>
</tr>
</tbody>
</table>
4. Design and deploy national-scale procurement initiative. F4F will create a national-scale contracting process for AFV utilizing established national models to guide this work.

The F4F grant objectives described in the workplan (Appendix, Item B) outlined task-level details and identification of significant milestones. All in all, the original objectives stayed true through the 30-month initiative, with a few deviations to enhance and improve the process or make modifications when needed to take advantage of new opportunities.

**Figure 1: Task-Level Details of Project Objectives**

<table>
<thead>
<tr>
<th>Objective 1: Project foundation and accountability protocols</th>
</tr>
</thead>
<tbody>
<tr>
<td>o Establish programmatic and administrative protocols: financial and activity monitoring, verification of goals attainment.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objective 2: Create replicable procurement best practices, templates and outreach and education</th>
</tr>
</thead>
<tbody>
<tr>
<td>o Establish communications and stakeholder engagement strategies.</td>
</tr>
<tr>
<td>o Examine procurement processes currently in operation, identify key success factors and establish best practices, barriers, challenges, and possible solutions.</td>
</tr>
<tr>
<td>o Develop strategic regional, nationwide outreach education campaigns.</td>
</tr>
<tr>
<td>o Test and refine procurement templates</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objective 3: Large-scale Regional Procurement Initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>o Design and deploy pilot large-scale regional procurement initiative</td>
</tr>
<tr>
<td>o Fully implement five large-scale regional procurement initiatives.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objective 4: – National-scale Procurement Initiative</th>
</tr>
</thead>
<tbody>
<tr>
<td>o Design national-scale procurement initiative with business plan with implementation</td>
</tr>
</tbody>
</table>

**Table 3: Highlights of the F4F Application's Projected Deliverables/Milestones**

<table>
<thead>
<tr>
<th>Deliverable/Milestone/Critical Success Factor</th>
<th>Quantity Goals</th>
<th>Milestone Year 1</th>
<th>Milestone Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.M.3 Engaged stakeholders during planning and implementation stages.</td>
<td>40,000</td>
<td>10,000</td>
<td>30,000</td>
</tr>
<tr>
<td>1.M.6 Media impressions (websites, e-newsletters, direct emails, social media, workshop/ resource flyers, press releases, newsletters, etc.)</td>
<td>100,000</td>
<td>20,000</td>
<td>80,000</td>
</tr>
<tr>
<td>2.M.2 Best practices templates</td>
<td>5-10</td>
<td>5-10</td>
<td>---</td>
</tr>
<tr>
<td>3.M.3 Procurement results (# of vendors under contract; cost savings negotiated, etc.)</td>
<td>40</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>4.M.2 National initiative business plan</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4.M.3 Procurement results (# of vendors under contract; cost savings negotiated, etc.)</td>
<td>12</td>
<td>---</td>
<td>12</td>
</tr>
</tbody>
</table>
ADVANTAGES OF COOPERATIVE PROCUREMENT

The premise of the Fleets for the Future grant application and subsequent strategic framework was to take advantage of the cooperative purchasing expertise of the regional councils and the outreach/education networks expertise of the Clean Cities Coalitions to develop and promote alternative fuel vehicles through cooperative procurement aggregation.

Cooperative procurement is a form of strategic sourcing, aggregating the spending of multiple public agencies with competitively sourced suppliers to maximize buying power — optimizing pricing, transactions costs, and processing time through the strategic use of cooperative procurement programs. Cooperative procurement has become a well-established practice in the past two decades with increasing representation and participation by public entities. New forms of collaboration to support cooperative procurement are evolving, including large national consortiums and more local and regional cooperative programs.

The benefits of using a cooperative procurement approach are numerous. Cooperative purchasing is:
- Competitive — contracts are established through a competitive solicitation process using public sector principles and processes.
- Convenient — significant staff resource time and expense can be saved, increasing staff productivity.
- Flexible — contracts are designed to meet the demands and needs of organizations of all sizes.
- Transparent — all activities are captured and often published by multiple organizations.
- Compliant — cooperative contracts are designed to meet statutory, policy and administrative requirements.
- Insightful — when using a cooperative approach, the end-user can review and analyze the pricing and services before deciding to use the contract.

<table>
<thead>
<tr>
<th>Table 4: Cooperative Purchasing: Best Practices, Benefits, and Drawbacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>**Cooperative Purchasing – Best Practices *</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
**Regional Procurement Initiatives**

The five F4F participating regional councils were able to engage their extensive stakeholder groups and initiative several different approaches to AFV procurements to accomplish the F4F grant goals. The advantages of the F4F strategy is that it is based on proven, established regional council networks that: 1) develop and implement procurement processes that meet the needs and legal requirements of the participating jurisdictions; 2) use administrative capacity to document progress and create replication models that can be implemented across the country; and 3) implement stakeholder-driven communications, outreach, and marketing campaigns. Furthermore, F4F provides an innovative approach to AFV procurement based on: the focus on local, regional, state, and national markets; the ease of implementation due to proven best practice models; established national and regional networks with the capacity for rapid deployment; and the project’s ability to impact a large portion of the U.S. population who have yet to embrace alternative fuel vehicles.

**Clean Cities Coalitions**

The Fleets for the Future team consisted of thirteen participating Clean Cities Coalitions. F4F leveraged the willingness of the U.S. DOE Clean Cities Coalitions coordinators to share information, act as a clearing house for information, and utilize their relationships with over 14,000 stakeholders collectively. The CCC outreach coordinators, led by the Metropolitan Energy Center, worked in conjunction with NARC and the technical advisors to provide outreach and educational support to public, private, and commercial fleets in the targeted geographic regions.

<table>
<thead>
<tr>
<th>Clean Cities Coalitions</th>
<th>Description of Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metropolitan Energy Center/ Kansas City Regional Clean Cities</td>
<td>Served on the F4F national team and technical advisors; led the F4F partner CCCs in outreach efforts; partnered with MARC on the Greater Kansas City procurement initiative and consumer EV group buy programs.</td>
</tr>
<tr>
<td>Clean Communities of Central New York</td>
<td>Served on the F4F national team and technical advisors; led the search for recruitment of a private industry agency partnership.</td>
</tr>
<tr>
<td>Dallas-Fort Worth Clean Cities Coalition</td>
<td>Partnered with North Central Texas COG on the Dallas/Ft. Worth procurement initiative.</td>
</tr>
<tr>
<td>Massachusetts Clean Cities Coalition</td>
<td>Partnered with MAPC on the Greater Boston procurement initiative.</td>
</tr>
<tr>
<td>Tucson Regional Clean Cities Coalition</td>
<td>Partnered with PAG on the Greater Tucson procurement initiative.</td>
</tr>
<tr>
<td>Greater Washington Region Clean Cities Coalition</td>
<td>Partnered with MWCOG on the Mid-Atlantic procurement initiative.</td>
</tr>
</tbody>
</table>
Utah Clean Cities | Served as outreach partner for the national procurement initiative.
--- | ---
Western Washington Clean Cities | Served as outreach partner for the national procurement initiative.
Clean Fuels Ohio | Served as outreach partner for the national procurement initiative.
Triangle Clean Cities | Served as outreach partner for the national procurement initiative.
Tulsa Clean Cities | Served as outreach partner for the national procurement initiative.
Southeast Louisiana Clean Fuel Partnership | Served as outreach partner for the national procurement initiative.
Centralina Clean Fuels Coalition | Served as outreach partner for the national procurement initiative.

**National Procurement Initiative**

*Figure 2. 7-Step Strategic Procurement Framework*

The F4F team developed a national-scale procurement plan (Appendix, Item E) and created a 7-step strategic procurement framework to identify models and partnerships to serve public and nonprofit
fleet purchases (see Figure 2 above, and Appendix, Item C). The following description highlights the steps taken to research, develop, and implement a national procurement agreement. The final results included a successful partnership with Sourcewell, which incorporated information from F4F partners collected during the research and engagement phase and the market analysis phase for several of its new contracts.

The two main ways this collaboration was beneficial were 1) the ability of the F4F team to engage new potential purchasers/members and educate them about existing Sourcewell alternative fuel vehicle contracts, and 2) the contribution of industry expertise and assistance at key stages of the development of new contracts, including electric vehicle (EV) charging contracts and fleet management services contracts.

REGIONAL COLLABORATIVE PROCUREMENTS

Introduction

Five regional councils participated in the F4F regional procurement efforts, covering the District of Columbia and nine states nationwide: Arizona, Texas, Kansas, Missouri, Massachusetts, Virginia, Maryland, Pennsylvania and New Jersey. Regional councils are the ideal organizations to lead these initiatives as they are experts in coordinating regional efforts, deploying cooperative procurement initiatives for a wide variety of products and services, and engaging public and private sectors through stakeholder working groups. Additionally, compliance with state and federal procurement laws is essential to a successful procurement initiative. Through strong, existing relationships with state departments of transportation and Clean Cities Coalitions, the participating region councils have access to legal experts who can decipher the differences in state and federal procurement laws and facilitate the deployment of the most appropriate alternative fuel vehicles within their regions.

The participating Clean Cities Coalitions (CCC) were integral to the success of the regional procurement programs as well as the thorough F4F outreach efforts. Key CCC coordinators participated in the F4F national team as top-level project advisors, which opened the doors for recruiting key technical advisors. They also gave the team access to the comprehensive CCC outreach mechanism with effective information disseminators and recruiters for fleet participation.

Greater Kansas City Region

Mid-America Regional Council (MARC)

Metropolitan Energy Center (MEC)
**Background**

The Greater Kansas City (KC) region cooperative procurement program (also known as the KC pilot project) was launched early in the Fleets for the Future initiative – within the first six months of the 2.5-year grant period – as a pilot project. The KC pilot project assisted the national team in providing several possible procurement aggregation options for the other participating regions to consider. The strategies deployed, the materials developed, partnerships formed, and lessons learned greatly informed the F4F program and has served as a strong foundation for the overall success of the initiative.

The Kansas City pilot project was able to successfully demonstrate the F4F’s overall goal through its regionally-based programs:

- The integration of AFV options into their metro vehicle bid for public and nonprofit organizations.
- The consumer EV group purchase program.

An evaluation report (Appendix, Item D) provide program details of the KC pilot project that includes: approaches taken; key programmatic components evaluated; findings that include successes, barriers, and lessons learned; and conclusions.

**Metropolitan Kansas City Regional Cooperative Procurement AFV Pilot Program**

The F4F Kansas City team were able to join an established metropolitan collaborative vehicle procurement bid process (also called the metro vehicle bid process) in the summer of 2016 with the overall goal to introduce alternative fuel vehicles options to the public and nonprofit sector. The F4F representatives worked very closely with the Mid-America Council of Public Purchasing (MACPP), who has organized and implemented the metro vehicle bid process since 2002. The F4F Kansas City pilot project was involved in the planning and implementation of MACPP’s 2016 metro vehicle bid.

The final results of the metro vehicle bid process were 44 vehicle builds in eight classes. Multiple AFV options were received on 35 of the 44 vehicle builds.

All in all, 13 dealerships secured contracts with Johnson County, Kansas (the administrative lead on the metro vehicle bid process), which included multiple AFV models in all eight classes of vehicles.

---

**RESULTS**

Based on dealership reports and follow-up interviews, it is estimated that over $150,000 in administrative costs were saved as the result of 29 agencies purchasing 445 vehicles.

It is estimated that 13.5 percent of the total vehicles purchased were AFVs, representing Flex Fuel E-85, Hybrid EVs and Compressed Natural Gas (CNG) vehicles.

**Vehicle Fuel Type**

- Conventional Fuels
- Alternative Fuels

13.5%
Results
The Metropolitan Kansas City Regional Cooperative Procurement AFV Pilot Program succeeded on multiple levels and has established alternative fuel vehicles as viable options for fleet purchases in the future. Key results/findings include:

- The involvement of the Fleets for the Future team provided significant value to the 2016 metro vehicle bid process.
- The project team successfully integrated AFV options into an established metro vehicle bid process, which should be sustainable through subsequent bid processes.
- Final bid proposals included multiple AFV options on 35 of the 44 vehicles models. Thirteen dealerships secured contracts in all eight classes of vehicles. See Appendix, Item D, Number 2 for a listing of vehicles available for fleet purchases.
- The project achieved higher visibility for AFV options to public jurisdictions fleet managers, procurement staff, etc.
- The project achieved higher levels of awareness and AFV knowledge on the part of fleet managers, as well as dealership sales and service staff.

The F4F project team’s outreach and education efforts to promote the AFV options secured during the metro vehicle bid process are demonstrated in the table below:

<table>
<thead>
<tr>
<th>Table 6: Greater Kansas City Region Outreach and Education Efforts Following the 2016 Metro Vehicle Bid Process</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communications</strong></td>
</tr>
<tr>
<td><strong>Website Views</strong></td>
</tr>
<tr>
<td><strong>Number of Individuals E-Newsletter Articles Reached</strong></td>
</tr>
<tr>
<td><strong>Emails of News Releases Sent to Media Contacts</strong></td>
</tr>
<tr>
<td><strong>Direct Emails Sent (E-blasts)</strong></td>
</tr>
<tr>
<td><strong>Facebook Posts Impressions</strong></td>
</tr>
<tr>
<td><strong>Twitter Impressions</strong></td>
</tr>
<tr>
<td><strong>Printed Newsletters, Workshop Flyers Distributed</strong></td>
</tr>
<tr>
<td><strong>In-Person Event Attendees (Workshops, Meetings, Presentations, etc.)</strong></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

*2 sent electronically to 40 media contacts

Further evaluation reflections below enumerate successes, barriers and lessons learned:

Successes
1. Alternative fuel vehicle options are now embedded and will continue to be incorporated in future MACPP metro vehicle bid documents. Eighteen CNG, fourteen propane, four HEV, and three PEV options are now available under the contracts secured under the 2016 metro vehicle bid process.
2. The cost savings derived from purchasing vehicles through a cooperative procurement program is noteworthy. The most significant savings can be shown through the reduction of transaction and administrative costs and the savings extended by volume pricing. Plus, fleet managers are motivated...
by the simplicity of the process, as well as the ability to deal with local vendors. See Appendix, Item D, Number 1 for cost savings details.

3. Through dealership and fleet interviews, the F4F project team confirmed that the 2016 metro vehicle bid is an attractive option because of its simplicity, which should not be underestimated. Further streamlining can only enhance the appeal of this process.

**Barriers**

1. The overall response to the request for AFV options on the bid line items was high, indicating that outreach efforts and intent were clear and effective. However, cooperative vehicle procurement processes have been designed to be very detailed and often lack flexibility to add new elements to the bids. It was difficult to develop a single, consistent section within the various bid documents that described the AFV options and the best means to present pricing considerations. Consequently, the bids received from the dealerships were not always clear on the AFV engine, tank volume, and/or pricing details.

2. Most public sector agencies do not consider the total cost of ownership when considering the cost saving potential of an AFV purchase. Consequently, they do not include cost savings from lowered fuel and maintenance costs, which can justify higher upfront costs of AFVs.

3. Outreach messaging is scattered and does not effectively target both dealerships and fleet and procurement managers. Consequently, attempts to reach the target audience have had varied levels of success.

4. Fleets indicated an issue with using the MACPP metro vehicle bid in conjunction with federal grants. Specifically, the Missouri and Kansas Departments of Transportation, who operate the Congestion Mitigation and Air Quality Improvement (CMAQ) grants, require a new bid for all grant projects. The new bid requirement means purchases already negotiated through the MACPP vehicle bid are ineligible for grant funding. To be eligible, the purchases must be made through a new bid, negating much of the time-saving benefits the 2016 metro vehicle bid offers.

**Lessons learned**

1. The existing process proved to be an advantage in the end, since the F4F pilot project did not have to start from scratch. It also enabled fleets to avoid the added time and duplication of effort involved when using multiple bid processes.

The need for general education and outreach education remains paramount, as fleet managers and dealerships have varying degrees of knowledge about alternative fuels, depending on whether they had any previous experience purchasing AFVs.

Given the lack of specificity in many responses to the AFV option, F4F team staff is still working through a more effective way to represent AFV in the bid spec. While improvements are desirable, the language used for the pilot proved serviceable.

2. Although AFV upfront purchase costs remain higher than conventional gasoline and diesel vehicles, savings may be achieved when offered within a cooperative procurement program and justified through a total cost of ownership analysis.

3. The cooperative procurement vehicle bid process should not be considered a time limited process, but rather an ongoing effort: continually integrating new technology into the bid process and disseminating standardized educational information on the benefits of the AFV technology and the options available within the vendor awards. The issues with CMAQ funding illustrate the need to
inform a broader audience about the MACPP vehicle bid process — not just fleets and dealerships, but grant funders and grant managers as well.

Consumer Electric Vehicle Group Purchase Program
The F4F-involved EV group purchase programs that were hosted in the greater Kansas City region in 2016-2017 had two target audiences: Round 1) residents in Kansas City, Missouri; and Round 2) University of Missouri – Kansas City affiliated individuals — faculty, staff, students and alumni. Round 1 was originally designed to be a limited six-week campaign but was further expanded to include the Kansas City Power & Light (KCP&L) service territory with a time extension of a total of six months — through June 2017. Round 2 was announced in April 2017 and the offer was valid through June 2017.

Results
The F4F project team’s efforts to test the consumer group purchase model succeeded with many lessons learned to pass on to other regions. The EV market growth during the group buy campaign of 87 percent is notable.

Key elements of success include:

- The involvement of the Fleets for the Future team provided significant value.
- The project team successfully executed the consumer group purchase program model with the assistance of key partners.
- A thoughtful marketing plan is needed to reach the ready-to-buy market.
- The EV group buy campaigns achieved higher levels of public awareness and EV knowledge.

The F4F project team planned a coordinated marketing campaign, consisting of a web pages, social media outreach, channel marketing through community groups, earned media, online advertising, radio advertising, and public lecture events on EVs.

<table>
<thead>
<tr>
<th>Table 7: Greater Kansas City Region Outreach and Education Efforts for EV Group Buy Initiative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications</td>
</tr>
<tr>
<td>Website Views</td>
</tr>
<tr>
<td>Number of Individuals E-Newsletter Articles Reached</td>
</tr>
<tr>
<td>Emails of News Releases Sent to Media Contacts</td>
</tr>
<tr>
<td>Direct Emails Sent (E-blast)</td>
</tr>
<tr>
<td>Facebook Posts Impressions</td>
</tr>
<tr>
<td>LinkedIn Impressions</td>
</tr>
<tr>
<td>Twitter Impressions</td>
</tr>
<tr>
<td>Digital information Board</td>
</tr>
<tr>
<td>Workshop Fliers Distributed</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

87

Percentage growth in Nissan Leaf sales in the KC market
Further evaluation reflections below enumerate successes, barriers and lessons learned:

**Successes**
1. Six area Nissan dealerships participated in Round 1. Due to the success of the initial period, the program was extended until March 31, 2017, and again until June 30. During each quarter, F4F group buy programs, the Kansas City region was ranked the fastest-growing EV market.
2. The F4F-sponsored group buy program featuring the Nissan LEAF resulted in an 87 percent increase in year-over-year sales in the Kansas City market for the fourth quarter. The consumer savings was $10,000 per vehicle before applying the federal tax rebate.

**Barriers**
1. The dealership response to the formal Request for Proposals (RFP) was minimal (even given F4F engagement with each target dealership to identify the appropriate contact and gauge interest prior to posting the RFP.) Subsequent negotiations were necessary, and a discount price was reached with all Nissan’s dealerships in the KC market. Additionally, the success of the Round 1 group buy program led to an unexpected hurdle: the market did not have enough Nissan LEAFs to meet local demand. Consequently, at the start of Round 2, only a limited number of Nissan LEAFs were available for purchase in the local market. This severely hindered the potential for continued success.
2. Nissan NA being the only EV manufacturer willing to deeply discount its EVs to the consumer market, combined with having a deep discount already in the local market, made it very difficult to equitably promote multiple EV brands.

**Lessons learned**
1. The group purchase program model is most successful when presented as a time-limited offer with a robust communications/marketing campaign, accompanied by multiple OEM participation having sufficient inventory available. The Round 1 group buy campaign was very successful in the winter and early spring, chiefly due to online advertising effort, where ads appeared on online car marketing sites for computer users located in the KC market, as well as electric utility bill inserts across the KCP&L service area. KCP&L’s analysis indicated that the clear majority of sales occurred as links from those online ads. Word of mouth via traditional networks was much less successful. Though generally supportive of EVs and sometimes primarily composed of future EV buyers, purchases were slower from this group. Targeted online ads, which are very affordable by traditional marketing standards, are the most effective way to reach ready buyers.
2. Dealerships will generally not have the ability to offer deep discounts. If dealership partners and/or multiple OEM programs are desired, anticipate a smaller discount. If deeper discounts are desired, negotiate directly with OEMs.

**Impact of the Greater Kansas City Region Pilot Project**
The impact of the Kansas City pilot project can be illustrated by reflecting on the original goal statement of the grant document.

The F4F initiative’s goal was to work toward achievement of economies of scale for alternative fuel vehicles (AFVs) through aggregated procurement initiatives. F4F strives to accomplish these economies of scale through a coordinated strategy designed to increase knowledge, lower the transaction costs of procurement, achieve better pricing, and address potential challenges arising
from large-scale procurement initiatives, thereby increasing the deployment of alternative fuel vehicles in public and private sector fleets.

The Kansas City pilot program was able to demonstrate the F4F’s goal through its regional-based pilot programs — the metropolitan vehicle bid and the group purchase program. The end results showcased successful integration of AFV options in an already established vehicle bid process; documented cost savings through administrative and transactional procurement efficiencies; increased knowledge of AFV technologies and benefits; discounted pricing to local governments and regional consumers; and, ultimately, increased AFV deployment.

Greater Boston Region - Metropolitan Area Planning Council

Approach

The Metropolitan Area Planning Council (MAPC) launched the Green Mobility Group Purchasing Program that leveraged the innovative contracting features of the statewide contract, VEH102, and built on existing partnerships with state agencies to reduce the cost of clean vehicle technologies for public fleets.

Three aspects of the statewide contract innovated beyond past contracts: 1) vendors are asked to provide volume-based discounts along with their product pricing, 2) public entities nationwide can purchase off the contract, and 3) there is a flexible process for approved vendors to add new products and for new vendors to be added to the contract.

In tandem with this contracting process, MAPC carried out public education and engagement to identify which alternative fuels were of the greatest interest to municipal fleets and collect input on program design. Based on the interest collected during spring 2017, MAPC collaborated with Massachusetts (MA) Department of Energy Resources and MA Operational Services Division on a purchasing agreement with XL Hybrids to aggregate state and municipal purchases of aftermarket hybrid electric conversion systems offered under the statewide contract VEH102. This agreement offered both bulk and accelerated time-frame discounts for purchase orders submitted through VEH102 during the six-month period and was available to public entities in Massachusetts and nationwide.

Drawing on the success of the pilot round of the program, MAPC expanded the Green Mobility Group Purchasing Program in 2018 to facilitate aggregate bids for electric vehicle charging stations. They issued a request for quotes off the VEH102 contract and awarded a low bid to two vendors on four types of electric vehicle charging stations in August 2018.

Results

The Green Mobility Group Purchasing Program succeeded on multiple levels and has established alternative fuel vehicles as viable options for fleet purchases in the future. Key results/findings include:

- Eleven vendors offering clean vehicle technologies are available to public entities in Massachusetts and nationwide on the statewide contract VEH102 (six electric vehicle charging station vendors, two idle reduction vendors, and three aftermarket conversion vendors).
Four public fleets received discounts of 11-19 percent off their purchase orders by participating in the pilot round of the Green Mobility Group Purchasing Program – producing over $54,000 in cumulative savings for the participating fleets.

In the second round of the Green Mobility Group Purchasing Program, eight communities were offered a 13 percent discount off the manufacturer’s suggested retail price (MSRP) for Level II Dual Head stations, and a seven percent discount off MSRP for Level III/DCFC Dual Head stations. If all eight communities move forward with their purchases by November 2018, they will save approximately $27,000 total.

A replicable model for pricing agreements with aftermarket conversion technology vendors on the statewide contract that allows state agencies and municipalities to buy in bulk together.

A replicable model for executing a group request for quotes off the statewide contract for electric vehicle charging stations and a streamlined installation process.

A pilot of the use of telematics to assess EV suitability within the Town of Natick’s municipal fleet for identification of future clean vehicle technology purchasing opportunities.

Raised awareness of the statewide contract for advanced vehicle technology across the state and nationwide with the support of the Fleets for the Future project partners.

The MAPC F4F project team’s outreach and education efforts to promote the statewide contract, VEH102, and the Green Mobility Group Purchasing Program are demonstrated in the table below:

<table>
<thead>
<tr>
<th>Table 8: Greater Boston Region Outreach and Education Efforts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communications</strong></td>
</tr>
<tr>
<td><strong>Website Views</strong></td>
</tr>
<tr>
<td><strong>Number of Individuals E-Newsletter Articles Reached</strong></td>
</tr>
<tr>
<td><strong>Emails of News Releases Sent to Media Contacts</strong></td>
</tr>
<tr>
<td><strong>Direct Emails Sent (E-blast)</strong></td>
</tr>
<tr>
<td><strong>Facebook Posts</strong></td>
</tr>
<tr>
<td><strong>Tweets</strong></td>
</tr>
<tr>
<td><strong>Printed Newsletters, Workshop Fliers Distributed</strong></td>
</tr>
<tr>
<td><em><em>In-Person Events Held</em> (Workshops, Meetings, Presentations, etc.)</em>*</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

*In-person events represent discrete meetings/events/webinars, whereas all other data capture number of impressions. All data represents metrics as of April 10, 2018.

**Barriers**

1. Public fleets remain reliant on grant funding to support the purchase of clean vehicle technologies. This reliance constrained the timeline of the group purchasing program and made it a challenge to recruit additional purchases once the pricing agreement and discounts were finalized.

2. Within vehicle classes of light duty trucks and medium duty work vehicles, there is hesitance from municipal fleet managers to be “the first” to adopt new clean vehicle technologies.
Impact of the Greater Boston Region Project
MAPC’s program led to the creation of a statewide contract for advanced vehicle technology with national reach and the development and refinement of an approach to group purchasing off statewide contracts for clean vehicle technology. MAPC’s program achieved the goals of the Fleets for the Future project by bringing volume-based discounts to the public entities that participated. The outreach and education conducted for the project established MAPC as a key player in the alternative fuel space in MA and increased awareness of the opportunities to advance alternative fuels across the region.

Metropolitan Washington Region - Metropolitan Washington Council of Governments

Approach
The commitment to support MWCOG’s members through cooperative purchasing began over 40 years ago. Since inception, aggregate purchasing opportunities through the regional council have included medical supplies, fuel, ice melt, road salt, office furniture, gasoline fuel, office supplies, natural gas, and public safety equipment. As MWCOG’s previous aggregate buy efforts did not include any vehicles, F4F served as an opportunity to expand the existing program to sustainable mobility transportation options while connecting to regional goals related to climate resiliency, high performance buildings, energy security, greenhouse gas reductions, air quality, and energy storage.

The procurement approach began with issuing a request for information (RFI) to over 200 area and national dealerships. The goal was to facilitate a robust competitive response about the planned regional cooperative procurement initiative. Through the RFI, MWCOG gained an understanding of the market and the suppliers in the Mid-Atlantic Region, as well as how the availability of products and services might influence procurements. The vendor registration site was also used to promote the effort. Vendors can register to receive notifications of new solicitation opportunities.

A soft commitment request was developed to collect preliminary requests and identify vehicles and infrastructure needs for future solicitations. The project’s technical expertise was a critical component in developing a master list of potential vehicles to capture fleet needs. The results of the soft commitment identified 230 requested vehicles across 14 fleets and 56 stations across 9 fleets.

MARC’s pilot procurement was used as a template to develop the regional invitation for bid (IFB) for the vehicle procurement. The results of the soft commitments were used in the IFB to estimate future vehicle orders over the next 3 years. The aggregate vehicle bid was awarded in April 2018.

Results
• **Identified Co-Benefits**: Educated others on the co-benefits of AFVs and infrastructure deployment with existing or future planning goals related to:
  o Green purchasing: green products and aggregate procurement.
  o Petroleum reduction goals: reduce reliance on fossil fuels.
  o Resiliency and climate adaption planning: diversifying mobile fuel supply to mitigate risks.
Clean economy: growing the regional appetite for local fuels and growing the market for EV charging.

- **Aggregate Vehicle Bid Awarded**: Three vendors were awarded contracts resulting from the bid.
  - Individual agreements for final quantities are made between the vendor(s) and participating public fleets. Therefore, a quantification of the number of vehicles purchased using these contracts is not possible at this time.
  - Sixteen vehicle types are available for purchase.
  - Period for pricing is one year, April 9, 2018 - April 8, 2019, with two (2) one-year renewal options.
  - All vehicles that received pricing quotes are available for purchase to participating fleets and other interested public fleets through the rider clause.

- **Aggregate Infrastructure Bid**.
  - MWCOG has been actively working with its membership and other F4F partners to explore the possibilities of issuing a regional aggregate infrastructure bid. As of September 2018, they had not yet issued a bid, but are planning to continue exploring this avenue as their next steps.

The MWCOG F4F project team’s outreach and education efforts to promote their aggregate vehicle and infrastructure bids are demonstrated in the table below:

<table>
<thead>
<tr>
<th>Communications</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Website Views</td>
<td>N/A</td>
</tr>
<tr>
<td>RFI (Regional and National Dealerships) Distribution</td>
<td>220</td>
</tr>
<tr>
<td>Number of Individuals E-Newsletter Articles Reached (4 sent electronically to 3000+ contacts each)</td>
<td>12,000+</td>
</tr>
<tr>
<td>Emails of News Releases Sent to Media Contacts</td>
<td>N/A</td>
</tr>
<tr>
<td>Direct Emails Sent (E-Blast)</td>
<td>500</td>
</tr>
<tr>
<td>Facebook Posts</td>
<td>20</td>
</tr>
<tr>
<td>Tweets</td>
<td>20</td>
</tr>
<tr>
<td>Webinars</td>
<td>8</td>
</tr>
<tr>
<td>Printed Newsletters, Workshop Fliers</td>
<td>550</td>
</tr>
<tr>
<td>In-Person Events Held (Workshops, Meetings, Presentations, etc.)</td>
<td>35</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>13,353</strong></td>
</tr>
</tbody>
</table>

**Barriers**
1. Local government budget schedules may not align with the upfront planning and administration to coordinate a successful purchase. Some local governments purchasing windows required them to purchase vehicles before the IFB was issued or postpone purchasing to later time.
2. Changing administration environments by some local governments curtailed moving forward in the IFB process.
Impact of the Metropolitan Washington Region Project

MWCOG’s F4F effort succeeded in promoting AFVs and alternative fuel infrastructure as a key opportunity for public sector fleets to meet their individual sustainability-related objectives. Through this effort, MWCOG advanced the following key concepts:

- Adoption of a green fleet policy or fleet management plan aimed at improving fleet efficiency and reducing emissions of greenhouse gases and other pollutants.
- Incorporation of alternative fuel and charging equipment and infrastructure (e.g., natural gas, biofuel, electric, hydrogen) to public sector fueling facilities.
- Staff education and training for efficient use of and maintenance on all vehicle types in the fleet with a focus on alternative fuel vehicles.
- Support of the expansion of publicly accessible EV charging stations systems and other AFV fueling stations.

Greater Tucson Region - Pima Association of Governments

Approach

There were three focus initiatives for the Pima Association of Governments (PAG) and the Tucson Regional Clean Cities Coalition (TRCCC):

1. The region’s school districts were interested in a joint procurement for alternative fuel school buses.
2. TRCCC members were interested in outsourcing Diesel Emissions Reduction Act (DERA) decommissioning requirements and vehicle disposal to make fleet yard space for alternative fuel infrastructure and vehicles.
3. Local municipalities expressed interest in an electric vehicle municipal “fleet share” program.

PAG and the TRCCC initially started with the concept of aggregated procurement for school buses. School districts are always short of funding and the acquisition of school buses — especially the more expensive alternative fuel propulsion systems such as natural gas, propane, and electric — is often cost prohibitive. Add the cost of charging or filling infrastructure, and the price tag is even higher. The goal of PAG and TRCCC was to provide critical mass and bulk purchasing power to reduce the cost of these school bus acquisitions.

During PAG’s research for vehicle disposal, they negotiated and secured a contractual relationship with Copart, Inc., an online vehicle auction company. Copart modified their auction database to include alternative fuel vehicles, ultimately resulting in creating a secondary market for alternative fuel vehicles. Copart provides decal and equipment removal, as well as Diesel Emission Reductions Act decommissioning services. The negotiated contract terms are available to all Clean Cities Coalition members nationwide.

With initial local enthusiasm for a municipal fleet share program, PAG solicited a request for information from potential vendors. This RFI resulted in one response, which the regional F4F partners explored with their municipal partners’ organizations.
Results

- Aligning interests and funding resources proved difficult for the alternative fuel school bus procurement. Each school district had different vehicle requirements (i.e. make/model, seat belts, fuel type, air conditioning, WIFI, etc). Additionally, all school districts rely on grants, bonds, or other monies to acquire bus assets.

- PAG and TRCCC will continue to work with the State of Arizona to finalize the VW Settlement distribution and will assist school districts in the procurement of alternative fuel school buses and infrastructure.

- All Clean Cities Coalition members nationwide can participate under the same terms as negotiated by PAG and TRCCC for vehicle decommissioning and resell. PAG and TRCCC negotiated and signed a contract with the international online auction house Copart, Inc. to provide disposal and decommissioning for any vehicle in any condition in any of its 200 service facilities in 11 different countries. Furthermore, Copart updated their online auction site to include categories for alternative fuel and electric vehicles, making it the first auction house to specifically market AFVs to the secondary market. Copart is currently rolling out its services nationwide.

- PAG and the TRCCC prepared, solicited, and evaluated an RFI for an electric vehicle “fleet share” program in urban Tucson. Perhaps because of the novelty of an electric fleet share program, the partners only received one response. In addition, key staff changes within the region’s municipal partners’ organizations left a hole in the internal advocacy for the all-electric fleet share program. PAG and TRCCC will monitor the continuing development of fleet share programs and initiate one when all the partners are aligned.

Barriers

1. Vehicle acquisition is a multi-faceted activity with many differing requirements, and timing that is unique to each entity.

2. School districts have no discretionary money so capital acquisitions such as school buses almost always follow a successful bond election, a voter initiative, federal grants such as DERA, or in our case, the VW settlement. They are cash-constrained for training, parts, equipment required to maintain alternative fuel vehicles and space constrained for the added space required to install alternative fueling stations. With severe fiscal pressure on education funding and the pending VW settlement for the distribution of funds in Arizona, school districts delayed their purchasing decisions and continue to delay procurements until additional funding is available.

Impact of the Greater Tucson Region Project

Although the PAG and TRCCC procurement efforts encountered difficulty getting off the ground, they were about to raise the visibility of alternative fuel vehicles across the region. They have built strong relationships with some of the regional school districts and communicated to them the benefits of utilizing AFVs for their school buses. They will continue to work with them through the VW settlement process, assisting the school districts with their procurement of AFVs and infrastructure when they receive funding. PAG and TRCCC secured a contractual relationship with Copart, Inc. and helped them add alternative fuel vehicle options to their services – which is now available for any CCC to utilize across the country. They also highlighted the opportunity for electric vehicle “fleet share” in the region, which is a novel option for the municipalities there, which PAG and TRCCC will continue to promote.
Dallas/Fort Worth - North Central Texas Council of Governments

Approach
Through a collaborative public cooperative procurement initiative, North Central Texas Council of Governments (NCTCOG) sought to facilitate group purchases to increase fleet adoption of alternative fuels, which would contribute toward emissions reductions that assist in ozone attainment efforts.

To further promote AFV deployment in fleets, NCTCOG planned to create a region-specific cooperative procurement program focusing on select AFVs. Through significant fleet outreach, results of surveys, stakeholder group meetings, and three requests for proposals, NCTCOG found that an additional regional cooperative procurement would not add value to the market given the strength of Texas-based cooperative procurement entities and the precedent for fleets already using them and other cooperatives.

As a result of their region-specific procurement not adding additional value to the market, the NCTCOG team then focused their efforts in two areas:
- Promoting the F4F national procurement, highlighting the nationally-available procurements that their regional stakeholders could utilize.
- Consolidating existing information on the various alternative fuel vehicle procurement opportunities available to their regional fleets and making it easier to access in one place.

Results
The North Central Texas Regional Cooperative AFV Procurement Program succeeded on multiple levels and has established alternative fuel vehicles as viable options for fleet purchases in the future. Key results/findings include:
- Through the soft commitment form, staff received requests for procurement of over 70 alternative fuel vehicles.
- F4F national procurement contracts were highlighted in multiple DFWCC webinars, including multiple presentations by MAPC to showcase their contracts that are available nationwide.
- Improved awareness of AFV contract options for fleets in the NCTCOG region will put them in a good position as they start to develop applications to use VW settlement funding in their AFV deployment initiatives.
- Staff developed a user-friendly resource in the form of a soft commitment form to collect the quantity of various vehicle platforms desired in the region. The form was designed as a table format, listing all vehicle types with their corresponding alternative fuels available for each of the vehicles. Fleets were asked to fill out desired/anticipated vehicles they planned on purchasing within the next three years for project staff to gauge what vehicles would be included in the request for proposals (RFP). A total of 71 vehicles were requested through the soft commitment forms. The ease of use of the form for both fleet and project staff has led to the form being taken and used as a basis for Volkswagen Settlement conversations, and a version will be used once Volkswagen mitigation plan funds become available in Texas.
- Pricing forms for each vehicle platform in each fuel type were created for the RFPs. Each pricing form was specifically designed around the alternative fuel component and volume-based discount thresholds, with an optional second year contract option. Each “Added Equipment” listed on the
corresponding vehicle type’s specification sheet was listed out separately on each pricing form to give fleets the ability to customize their vehicles while still ensuring volume discounts on added options. If the vehicle was not available directly from an OEM, the pricing form also encompassed a portion of required upfit manufacturer information. Finally, to create a competitive response portion of the RFP, the pricing forms comprised sections for vendors to state any added value or infrastructure offerings that they would provide along with their vehicle proposals. These pricing forms will be leveraged in future projects and grants moving forward.

- Landing pages consolidating existing alternative fuel contracts by fuel type were created on the North Texas SHARE website. These streamlined the availability of alternative fuel fleet procurement opportunities to any regional fleet with an interlocal agreement with North Texas SHARE.

The NCTCOG F4F project team’s outreach and education efforts to promote their AFV procurement program is demonstrated in the table below:

<table>
<thead>
<tr>
<th>Table 10: Dallas/Fort Worth Region Outreach and Education Efforts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications</td>
</tr>
<tr>
<td>Website Views</td>
</tr>
<tr>
<td>Number of Individuals E-Newsletter Articles Reached</td>
</tr>
<tr>
<td>Emails of News Releases Sent to Media Contacts</td>
</tr>
<tr>
<td>Direct Emails Sent (E-blast)</td>
</tr>
<tr>
<td>Facebook Posts</td>
</tr>
<tr>
<td>Tweets</td>
</tr>
<tr>
<td>Printed Newsletters, Workshop Fliers Distributed</td>
</tr>
<tr>
<td>In-Person Event Attendees (Workshops, Meetings, Presentations, etc.)</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

* 2 were sent electronically to 40 contacts

Barriers

1. An RFP was published and promoted for alternative fuel vehicles for this project on two separate occurrences- one for 5 weeks in August/September 2017 and one for 6 weeks in November/December 2017, both times receiving zero vendor responses. Each RFP received feedback indicating that the request for deeper discounts than those currently available through other national procurement contracts could not be met, most specifically the pricing available through the Houston-Galveston Area Council H-GAC Buy program.

2. It was determined that NCTCOG/DFWCC would not pursue a third regional procurement RFP due to lack of vendor response to the two previous RFPs. NCTCOG/DFWCC continued to doubt that a regional-scale procurement would add value to the project, especially in light of the opportunities available to North Texas fleets through existing MAPC and NJPA contracts.
Impact of the Dallas/Fort Worth Region Project

While unsuccessful in creating a regional cooperative procurement, NCTCOG/DFWCC met the goals of F4F indirectly. The project helped NCTCOG improve understanding and awareness of the availability of AFVs with local fleets. This was accomplished through widespread promotion of the various F4F opportunities from numerous presentations, meetings, and e-blasts. The project ultimately helped spotlight existing regionally- and nationally-available contracts for AFVs, and what barriers within these contracts stop fleets from being aware of available options. Some of these barriers include websites being unsearchable or alternative fuel options not being transparent enough when using search functions.

While the RFPs did not get any responses, multiple resources that were developed – including pricing forms and soft commitment forms – that will be leveraged and re-used for other initiatives.

The NCTCOG team gained greater awareness of the multiple levels involved in local governments in order to approve a new procurement or vehicle fuel type. NCTCOG tried to overcome this challenge by sending project information and a signed letter from our director encouraging project participation in a top-down approach, to complement the bottom-up approach staff typically follows with fleet manager contacts. They also grew a deeper understanding of the vendor side of AFVs, creating much awareness on the importance of final delivery of AFVs, including a major emphasis on vendor and dealer collaboration. This early-on partnership between vendors and dealers to ensure the readiness and availability of AFVs to fleets without any additional upfits or work required on the fleet end post purchase, will help increase AFV deployment significantly.

NATIONAL PROCUREMENT INITIATIVE

Background

The F4F team developed a national-scale procurement plan and created a 7-step strategic procurement framework to identify models and partnerships to serve public and nonprofit fleet purchases. The following description highlights the steps taken to research, develop, and implement a national procurement agreement. The final results included a successful partnership with Sourcewell, which incorporated information from F4F partners collected during the research and engagement phase and the market analysis phase for several of its new contracts.

The two main ways in which this collaboration was beneficial were 1) the ability of the F4F team to engage new potential purchasers/members and educate them about existing Sourcewell alternative fuel vehicle contracts; and 2) the contribution of industry expertise and assistance at key stages of the development of new contracts, including EV charging contracts and fleet management services contracts.

1. Research/Engagement

Research and engagement included identifying the following needs: the motivations of potential participating fleet stakeholders, the scale of the need for a wide variety of vehicle classes across multiple alternative fuel platforms, allies and key assets for the development of a procurement campaign, and opportunities for long term sustainability of procurement.
After the assembly of the core team of NARC, the technical experts, the regional councils, and the Clean Cities outreach team, the first step of the process was the development of a survey to best understand what vehicles and fuels were of the highest interest to potential participants. The survey results and other survey-related materials are provided as Appendix, Item G.

The next step was to determine whether any of the project partners were capable of and committed to hosting a set of long-term vehicle procurement contracts that would be available nationwide. While many of the regions already had active and successful local procurements, few were appropriately set up and could commit to expanding their operations nationwide. Therefore, the project team interviewed several leading national public procurement entities to determine whether there was a match between any of these cooperatives and the Fleets for the Future objectives. These interviews informed the selection of a single procurement partner, Sourcewell, to enable bid execution and subsequent steps.

The F4F team will continue to monitor available options through Sourcewell, and it is expected that there will be additional aggregated procurement opportunities now that 45+ states have announced their Volkswagen (VW) Environmental Mitigation Trust (EMT) settlement programs.

2. Requirement Identification

The F4F team’s technical advisors researched the types of alternative fuel vehicles that have the highest potential appeal to fleets and that are commercially available nationwide. These were identified as the vehicle types that are the most suited for a national procurement campaign. This research included looking at each fuel type and its infrastructure needs, infrastructure maintenance needs, vehicle types that are well suited to each fuel, vehicle maintenance impacts, existing procurement options, and resources and case studies. It also included obtaining industry guidance on specific requirements to include in RFPs and the development of a “top 10” vehicle list for each alternative fuel, with guidance from the Electrification Coalition, the Propane Education and Research Council, and Yborra and Associates. This list was created based on total potential fuel reduction/emissions benefits, financial savings, vehicles that are least likely to be highly customized for individual municipalities, and vehicles that have perennial popularity. The feedback is listed below:

<table>
<thead>
<tr>
<th>Table 11: “Top 5” for Propane Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Propane Vehicles</strong></td>
</tr>
<tr>
<td>School Buses Types A and C, including Blue Bird, Collins, IC Bus, and Thomas Built</td>
</tr>
<tr>
<td>Delivery Vehicles (UPS, FedEx, DHL, bakeries, Linen Services, Nestle)</td>
</tr>
<tr>
<td>Law Enforcement - Ford Explorer SUV, Ford Taurus, GM Chevy Tahoe, Chevy Impala, Dodge Charger</td>
</tr>
<tr>
<td>Ford Transit</td>
</tr>
<tr>
<td>E450 Cab and Chassis</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 12: “Top 5” for Natural Gas Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Natural Gas Vehicles</strong></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Class 4-6 C/C with Utility Body (e.g., F450/550/ (and 650/750))  
30-Ton/1-Ton Pickup – (dedicated CNG), FWD and AWD/4WD, Bed Delete Option on the 1-ton  
Low Cab Forward (LCF) or Cab Over Engine (COE) Refuse Truck with Side Loader or Front Loader (e.g. Mack LR/LE, Crane Carrier LET, Autocar Xpeditor)  
Compact Sedan/SUV (Bi-Fuel and Dedicated CNG)  
Full Size SUV with Police Pursuit Vehicle Option: (Bi-fuel and Dedicated CNG)  
Class 7 Dump/Plow Truck (e.g., Freightliner M2-112, SD 114; Peterbilt 348; Kenworth T440/470)  

<table>
<thead>
<tr>
<th>Table 13: Top Electric Vehicles</th>
</tr>
</thead>
</table>

**Electric Vehicles (Based on R. L. Polk & Company Data)**

- Battery Electric Vehicle (BEV): Nissan Leaf; 2017 Chevy Bolt, BMWi3; and Smart For Two
- Low Speed Vehicles: GEM LSEV
- Transit buses: Proterra, BYD
- Freight handlers: Orange EV terminal truck
- Battery Electric school buses

One of the key elements of a successful aggregated procurement initiative was to find opportunities for common specifications that encourages wider participation. The F4F team found barriers to this outcome – as the need for customization is great when purchasing AFVs, especially in the more heavy-duty classes of vehicles.

3. **Market Analysis**

Market analysis was important to ensure that the vehicles we wanted to provide were readily available and their infrastructure would not create insurmountable barriers to procurement. Market analysis was an ongoing activity for the F4F team by its technical advisors, regional councils, and Clean Cities Coalitions partners. F4F partners reviewed the OEMs’ and dealerships’ current processes and ongoing practices and determined product availability and supplier reliability. The F4F team also analyzed the availability of AFVs through the leading cooperatives they had interviewed in the “Research and Engagement” step to assess gaps in the available contracts and determine which vendors had existing relationships that could be beneficial to local fleet stakeholders. The F4F team encouraged the procurement partner it ultimately selected to develop new contracts to address these gaps – including EV charging equipment and services, and EV leasing and fleet management opportunities – with the goal that these vendors would provide for easy monetization of the federal EV tax credit for municipal entities.

4. **Bid Execution**

As a result of the research and engagement, requirement identification, and market analysis steps, the F4F team chose to form a partnership with Sourcewell, a cooperative based in northern Minnesota with a strong history of cooperative procurement of vehicles for government agencies nationwide. The selection of Sourcewell allowed the F4F team to have the advantage of a
procurement system already in place. Sourcewell’s strong membership base and robust system and structure to manage national contracts ensured that the F4F team not only met its goal of providing cooperative contracts to fleets, but had a partner who could sustain operations beyond the project period.

Sourcewell had the sole responsibility of the bid execution for the F4F national procurement. The organization follows a robust procurement process to meet all necessary requirements for public agencies – bid policies, legally-established procedures, advertisement/notice strategies, bid and contracting documents, proposal evaluations, and established terms and conditions. Sourcewell has a proven track record for thoroughness, legal validity and successful execution, monitoring, and renewal processes. Throughout the project, F4F partners reviewed and observed bid processes to lend subject matter expertise and make suggestions to enhance current practices, including technical assistance on the aforementioned EV charging and fleet management solicitations. F4F partners held many conference calls with Sourcewell educating them on alternative fuel vehicles and infrastructure throughout the process.

In addition, the F4F partners assumed outreach support responsibilities to publicize the bid process and encourage AFV manufacturers, upfitters, and other associated vendors to submit proposals and offer discounts on their most popular platforms.

5. Award and Contracts
Sourcewell was also responsible for issuing awards and contracts. All the policies, contract documents, and terms and conditions are in place and include AFV-related contracts. The award is normally a four-year contracting term with an additional one-year renewal. Having the national procurement entity issue, hold, and monitor the contracts provides the needed longevity for this nationally aggregated procurement initiative, guaranteeing its sustainability. A complete procurement file is maintained by Sourcewell and contract documentation is posted for review.

Sourcewell’s awards span light-duty through heavy-duty vehicles. Sourcewell has awarded a contract to an auto-fleet specialty contractor to provide light-duty vehicles nationwide, including the responsibility to maintain a competitive slate of vendors that can readily supply vehicles with a wide variety of AFV option packages. This vendor covers arranging the alternative fuel options, vehicle preparation, and local delivery to the ordering fleet. For medium- and heavy-duty vehicles and chassis, Sourcewell has relationships with dozens of vendors that supply alternative fuel options through their contracts. A full list of these contracts (current as of August 15, 2018) is provided in Appendix, Item I, Number 2.

6. Contract Promotion
Contract promotion has been the joint responsibility of both Sourcewell and the F4F partner organizations. An outreach strategy was developed and deployed by project partners and their communications networks. A common message was developed, with a quick guide on how to utilize contracts, a Fleets for the Future landing page on Sourcewell’s website, and numerous handouts describing the available contracts for vehicles that use alternative fuels and the benefits of those contracts (e.g. percentage discount from MSRP). In addition, Fleets for the Future team members
and Sourcewell collaborators attended and presented at numerous fleet and green technology conferences. They also delivered information about the contracts in a series of educational webinars.

7. Evaluation
Contracts should be periodically reviewed for their effectiveness to inform and facilitate future rounds of the procurement process. Since sales data is proprietary to Sourcewell and its participating vendors, which are not formally-funded members of the F4F grant, only limited information could be compiled. Nonetheless, Sourcewell actively tracks performance including overall co-op membership, the number of members served by each contract, the dollar value of the business done on these contracts, the satisfaction of members, and the track record of vendors. The F4F partners received key details about contracts developed by Sourcewell with F4F input. Some of the highlights are included below in the national results section.

National Results
The partnership with the established national cooperative procurement entity Sourcewell yielded immediate opportunities to access AFVs throughout the nation. The F4F team assisted in elevating the opportunities of the AFV options to the Sourcewell national membership, promoted the visibility of the AFV technology, and provided technical expertise for new contract solicitations. A summary of key highlights is provided in the table below:

<table>
<thead>
<tr>
<th>Table 14: Sourcewell Partnership Key Highlights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of events and webinars where Sourcewell alternative fuel contracts were promoted</td>
</tr>
<tr>
<td>Number of Sourcewell vendors providing alternative fuel vehicles and/or infrastructure</td>
</tr>
<tr>
<td>Number of new Sourcewell members since partnership began</td>
</tr>
<tr>
<td>Number of EVSE contracts issued</td>
</tr>
<tr>
<td>Dollar volume of EVSE sales through Sourcewell through Quarter 2 in 2018</td>
</tr>
<tr>
<td>Fleet management vendors awarded that offer AFV solutions</td>
</tr>
</tbody>
</table>

In addition to the above accomplishments, the national team provided input to help Sourcewell understand the options available in the EV charging market and helped them define the desired scope in its spring 2017 EVSE solicitation. The result was a successful procurement with 5 leading EV charging vendors on contract that offer Level 1, Level 2, and DC Fast Charge equipment; installation services;
maintenance; repair; parts and supplies; leasing; warranties; and network services and software. The list of vendors is provided in Figure 3.

**Figure 3: Sourcewell EVSE Vendors and Offerings**

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Full catalogue</th>
<th>Discount: hardware</th>
<th>Discount: installation</th>
<th>Add 1 volume discounts</th>
<th>Level 1</th>
<th>Level 2</th>
<th>DCFC</th>
<th>Installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AeroVironment</td>
<td>✓</td>
<td>15%</td>
<td>None</td>
<td>Starting at 100 units</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ChargePoint</td>
<td>✓</td>
<td>20-30% (L2) 5% (DCFC)</td>
<td>N/A</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Independent network of installers</td>
</tr>
<tr>
<td>LilyPad</td>
<td>✓</td>
<td>21% (L2) 5% (DCFC)</td>
<td>5%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Siemens</td>
<td>✓</td>
<td>Up to 75% (L2)</td>
<td>Unknown</td>
<td>Starting at 500 units</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Greenlots (Zeco Systems Inc)</td>
<td>✓</td>
<td>0-20% (L2) 6-14% (DCFC)*</td>
<td>Unknown</td>
<td>4 volume tiers, each with discounts</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

During the spring and summer of 2018, the national team also worked with Sourcewell on its fleet management solicitation to provide comprehensive fleet management services, including leasing, vehicle repair and replacement, and preventative maintenance.

Based on F4F’s input, the scope of the fleet management solicitation was described with a heavy focus on alternative fuel vehicles, as shown in the language from the solicitation in Figure 4. We defined industry-specific questions that enabled Sourcewell to determine the degree to which vendors were willing to pass along the EV tax credit to public purchasers. The F4F team also notified prospective vendors about the solicitation and informed them that their willingness to pass along a percentage of the tax credit would be considered a value-added attribute. Four vendors were awarded contracts: Automotive Rentals, Inc. (ARI), D&M Leasing, Enterprise Fleet Management, and Merchants Fleet Management.
While Fleets for the Future could not obtain comprehensive information about the volume of alternative fuel vehicle purchases versus conventional vehicle purchases on the contracts the team developed and promoted with Sourcewell, F4F has received anecdotal evidence that fleets know and trust Sourcewell, have learned more about the AFV options available on Sourcewell as a result of the project, and are conducting purchases using the platform. For instance, in March 2018, the City of Encinitas, CA announced that it would be using Sourcewell to procure EV charging equipment, battery electric vehicles, and XL Hybrids conversions.\(^1\) Additionally, at the 2017 ACT Expo, as part of our outreach efforts, national team members participated in a meeting convened by representatives from Los Angeles and its peer cities to discuss large scale purchases of EVs. Our team introduced this group to Sourcewell and their contracts. Sourcewell was able to leverage this connection to ultimately build an EV procurement platform for the Climate Mayors group, which was unveiled at the Global Climate Action Summit in September 2018. With the launch of the platform, 20 cities and 2 counties have committed to purchase at least 391 EVs through Sourcewell.\(^2\)

In addition to the Climate Mayors’ decision to use Sourcewell, we expect the VW Environmental Mitigation Trust (and the significant amount of associated funding for AFV types that Sourcewell offers) will result in significant increases in the utilization of the Sourcewell contracts soon, particularly the EVSE contracts and the contracts for medium and heavy-duty propane and natural gas vehicles.

---


Private Aggregation Procurement Efforts

Continued efforts were made to find a suitable partner that would host a national procurement program for private fleets purchases. An RFI was issued in February 2017 and widely distributed to search for a viable and sustainable partnership. See Appendix, Item F for the RFI. The F4F team contacted many potential partners and had an extended conversation with National Auto Fleet Association (NAFA), but was ultimately unsuccessful in making formal arrangements with any organization. A private partner that functioned similar to Sourcewell was not found and current companies did not find benefits in a partnership. One of the primary reasons cited by the private companies was that they would find it difficult to hold any discount pricing on alternative fuel vehicle options for an extended amount of time.

COMMUNICATIONS: OUTREACH AND EDUCATION

The F4F initiative built a strong communications strategy that included a comprehensive use of education and outreach methods that were deployed both regionally and nationally throughout the 30-month grant period. The F4F approach to communications included: significant in-person contacts; an online clearinghouse of materials, promotions and other resources; vast social media campaigns; printed literature; workshop and webinar presentations (reaching both regional and national audiences); and ongoing connections with fleet managers, purchasing specialists, AFV association representatives, industry sales personnel, and the consumer public.

Each participating regional council, Clean Cities Coalition, and technical advisor spearheaded its own communications campaign in concert with the national team’s centralized efforts. The accumulative total statistics for the F4F team is highlighted in the table below:

<table>
<thead>
<tr>
<th>Table 15: Total Outreach and Education Efforts for F4F Project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communications</strong></td>
</tr>
<tr>
<td>Website Views</td>
</tr>
<tr>
<td>Number of Individuals E-Newsletter Articles Reached</td>
</tr>
<tr>
<td>Emails of News Releases Sent to Media Contacts</td>
</tr>
<tr>
<td>Direct Emails Sent (E-blast)</td>
</tr>
<tr>
<td>Facebook Posts Impressions</td>
</tr>
<tr>
<td>Tweet Impressions</td>
</tr>
<tr>
<td>Printed Newsletters, Workshop Fliers Distributed</td>
</tr>
<tr>
<td>In-Person Events Held (Workshops, Meetings, Presentations, etc.)</td>
</tr>
</tbody>
</table>

**Highlights from Education and Outreach Efforts**

As the total communications statistics above indicate there were major efforts made to promote – not only the opportunities available through the various regional cooperative procurement programs, but
also showcasing the AFV options available through Sourcewell national contracts. In this section, there will be several examples cited to provide a detailed look at some of the accomplishments of the F4F partners’ education and outreach efforts.

**Project Online Presence Efforts**

Because the F4F team were creating replicable procurement best practices, templates, and outreach/educational materials, a central website was needed to collect all the information in one place. This led to the creation of the project’s central website: fleetsforthefuture.org. The website acts as a one-stop shop, providing general information about the project, the national and regional initiatives, and frequently asked questions. One can find all the best practice guides created during the project, general information about a variety of alternative fuels vehicles and infrastructure, and previously-held F4F webinars. There are also previous blog posts that the F4F team wrote to update interested parties on the latest news associated with the project.

NARC also encouraged the other F4F partners, as well as the national procurement partner Sourcewell, to create F4F-related webpages on their own websites. On these specific webpages, F4F partners shared information on the overall project (often linking to project’s central website) and the latest news on their own regional efforts. They also provided information on how public agencies could get involved in the national and/or regional procurement efforts.

In addition, the F4F team were very active in promoting the national and regional procurements efforts on social media. Fleets for the Future had a central Twitter account, @Fleets4Future, where the NARC team tweeted about project news and webinar opportunities. The F4F partners also took to social media via Twitter and/or Facebook to share their own progress in the project, to help promote national opportunities and F4F webinars, and share AFV-related news that their stakeholders would be interested in.

Overall, the F4F team had a successful online presence during the project. The central website, F4F partner webpages, and social media accounts generated a lot of buzz from fleet managers in our targeted regions and across the country alike. As shown in Table 15, the F4F partners’ collective efforts generated 34,746 total website views, and Facebook posts and tweets that gathered 21,776 and 129,167 impressions, respectively.

**Sourcewell Fall 2017 Campaign**

In Fall 2017, the F4F team worked with Sourcewell to run a targeted outreach campaign for some limited-time clean vehicle promotions. From October 1-31, 2017, Zenith Motors offered a bulk discount of up to 7 percent off Sourcewell’s members-only pricing, and the National Auto Fleet Group (NAFG) held exclusive pricing on some of their most popular AFVs. The F4F team also took this as an opportunity to promote the ongoing EVSE contracts available through Sourcewell.

During October 2017, the F4F team heavily promoted these opportunities through social media, blogs, e-newsletters, emails, flyers, events, and more to their partnership networks. F4F hosted two webinars (with a combined 169 registrants) to give Sourcewell and representatives from Zenith Motors and NAFG a chance to talk about the specifics of their time-limited opportunities and how fleet managers can access them. Sourcewell also took these messages to their own events like tradeshows and conferences.

Although we could not obtain comprehensive information about the volume of alternative fuel vehicle purchases made during this time, we have other data that indicates a lot of interest was generated in
October 2017. Sourcewell gained 2,206 members from September 11 through November 3. Over a typical eight-week period, Sourcewell gains 100 new members a week. F4F’s outreach efforts almost tripled their normal growth rate. Additionally, the F4F team made a significant increase in individuals reached in the fourth quarter of 2017 than the quarter before. Collectively, the F4F partners reached out to 10,931 individuals through in-person events, communicated to 888 individuals via webinars, and had 6,759 views on their webpages and the central website.

Summer 2017 ACT Workshop
F4F promoted the project at many regional and national in-person events, but one of the most successful was the 2017 Advanced Clean Transportation Expo in Long Beach, CA. F4F hosted a session titled Fleets for the Future: Innovative Procurement Strategies to Reduce Cost & Aggregate Demand. The session began with an introduction to Fleets for the Future. Then speakers representing MEC, Sourcewell, and MWCOG spoke about their experiences with implementing cooperative procurements on the national and regional scale. Attendees were then broken out into groups – vendors, fleets primarily interested in EVs, and fleets primarily interested in vehicles requiring upfits – to have structured conversations.

The F4F presentation attracted approximately 75 attendees in a standing room only session. the F4F team created a list of contacts/stakeholders from these attendees and gathered survey data from them. The team also sent multiple emails to this group to provide them with project updates, including the newest procurement opportunities at the national level. NARC also created a video that has been shared on social media and is now viewable from NARC’s YouTube page. Additionally, the F4F partners that were at the ACT Expo had ample opportunities to network with hundreds of fleet managers and to spread the word about Fleets for the Future through F4F business cards and flyers.

Examples from Clean Cities Coalitions
During the F4F project, the Clean Cities Coalitions partners were essential to the collective outreach and education efforts. They engaged with the clean vehicle stakeholders and public fleet managers they already had strong relationships with in their region, allowing them to take a much more personal approach when sharing information about the F4F cooperative procurements taking place. Below are a couple of interesting, innovative examples of events put on by our Clean Cities Coalitions that helped spread the word about AFVs and Fleets for the Future:

- **Utah Clean Cities (UCC):** UCC hosted a couple of Business and Baseball U.S. DOE Listening Sessions. The Listening Sessions provided a safe space for fleet owners/managers to share successes, barriers, and solutions for AFVs and related infrastructure. After the formal Listening Sessions would end, attendees would have priority seats to a baseball game and could casually “talk shop” about industry innovations. UCC said that these events generated the most movement for the F4F efforts that UCC had taken on.

- **Clean Fuels Ohio (CFO):** From August 1-2, 2018, CFO hosted the Midwest Green Fleets Forum and Expo Conference in Columbus, Ohio. During the first day of the conference, CFO hosted a training with a representative from EC that shared information on the F4F program, vehicle options, and specific pricing for available EVs for fleets. This session was attended by over 100 participants and generated significant interest in the F4F program.
The F4F team produced many products and resources to increase awareness of alternative fuel vehicles and advanced technology, to build a case for aggregation procurement processes, to promote F4F procurement programs and partner services, and to establish a strong foundation for project sustainability. Below is a sampling of the products and resources created in the 30-month F4F initiative.

**Best Practice Guides**

To prepare stakeholders to successfully deploy AFVs in their fleets, the F4F team has compiled fleet management and procurement best practices specifically relevant to alternate fuels. These best practices build upon both the extensive information provided by the U.S. DOE and many recent successful case studies. The specific goal of these best practice guides is to educate procurement officers, fleet managers, and other interested stakeholders to plan for a large-scale deployment of AFVs.

These guides present information common to the procurement of AFVs of any fuel type. The five guides are:

1. Fleet Transition Planning for Alternative Fuel Vehicles
2. Electric Vehicle Procurement Best Practices
3. Gaseous Fuel Vehicle Procurement Best Practices
5. Guide to the Guides – Municipal EV Charging Resources

The five best practice guides are included in the Appendix, Item H, Numbers 1-5. Each guide contains a summary section that is highlighted below:

**Fleet Transition Planning for Alternative Fuel Vehicles**

<table>
<thead>
<tr>
<th>Best Practice</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive and Organizational Buy-in</td>
<td>Reach out to all stakeholders, from top officials to drivers, early and often. Invest in educating and communicating frequently to build consensus and provide a forum to share ideas and concerns. Find out what myths and misconceptions are prevalent among stakeholders and create a plan to dispel them.</td>
</tr>
<tr>
<td>Baseline Fleet Evaluation</td>
<td>Start with a high-level baseline evaluation of opportunities to procure AFVs with lower total cost of ownership than existing vehicles in order to identify an initial pool of candidate vehicles for further evaluation.</td>
</tr>
<tr>
<td>Financing and Budgeting</td>
<td>Explore financing and funding opportunities and strategies early in the process. Secure commitments from stakeholders to explore ways to overcome possible organizational budgeting barriers.</td>
</tr>
<tr>
<td>Common Specifications</td>
<td>Focus on common uses for fleet vehicles that may better lend themselves to bulk procurement – minimizing the need for specialization.</td>
</tr>
<tr>
<td>Refueling Infrastructure</td>
<td>Factor in the costs of infrastructure procurement and refueling practices in total cost of ownership calculations, if necessary. Use infrastructure availability as another criterion to establish high-priority AFVs.</td>
</tr>
</tbody>
</table>
Best Practice | Summary
---|---
**Vehicle Utilization Standards** | Ensure that the fleet is right-sized to improve the ROI of AFV deployment, e.g. that bi-fuel vehicles are used with the intended fuel and that plug-in hybrids are routinely charged in order to maximize the ROI.

**Added Provisions in Procurement Documents** | Include provisions for driver training and maintenance in procurement documents to ensure the safe, effective, and efficient use of AFVs.

**Disposal of Decommissioned Vehicles** | Become familiar with disposal requirements for decommissioned vehicles.

**Driver Training and Incentives** | Engage employees early and often in the plans to deploy AFVs and ensure proper training to operate the vehicles correctly and safely.

**Maintenance and Safety Training** | Train key personnel to perform AFV diagnostics, maintenance, and repairs. Ensure that training is provided to more than one technician to provide for redundant coverage, and implement a plan to maintain training for staff turnover.

**Ongoing Program Management** | Establish ongoing data-driven program management that tracks vehicle use/performance.

### Electric Vehicle Procurement Best Practices Guide

**Electric Vehicle Procurement Best Practices Guide Summary**

The benefits of deploying EVs in fleet applications can be numerous, from reduced petroleum use and greenhouse gas emissions to lower fuel and maintenance costs. As with any transition to a new technology, the process comes with notable changes. By following the lessons learned and best practices established by adopters of EV, any fleet can ensure the successful integration of EVs into their fleet operations. This step-by-step, evidence-based decision-making process will help fleet managers: determine whether their fleet is suitable for EV transition, select appropriate applications, and maximize their fleet’s potential.

### Gaseous Fuel Vehicle Procurement Best Practices Guide

**Gaseous Fuel Vehicle Procurement Best Practices Summary**

Fleets continue to deploy NGVs and propane autogas vehicles in greater numbers every year due to these gaseous-fuel vehicles’ advantageous attributes. As low-carbon, clean burning fuels, they reduce emissions. Ample domestic supplies of natural gas, propane autogas, and well-developed delivery infrastructures instill confidence in long-term low and stable pricing and energy security. A growing selection of vehicles and engine platforms are available from major OEMs and an expanding network of experienced, vetted aftermarket suppliers. The vehicle sales and service supply channel is maturing with OEMs, aftermarket system manufacturers, second-stage upfitters, and others coordinating more closely to reduce cost and delivery times while enhancing service capability and convenience. NGVs and propane autogas vehicles have logged hundreds of millions of miles of reliable performance in fleets of all sizes and duty-cycles, many of whom have worked collaboratively with OEMs and other gaseous-fuel technology stakeholders to apply their real-world experience to advance the next generation of vehicles. Increases in the number of natural gas (CNG and LNG) and propane autogas locations continue to make these AFV options more convenient and viable for fleets, while also
building greater confidence in the consumer market. Many states are implementing policies and programs favorable to AFV use, further accelerating market adoption and facilitating economies of scale.

Working collaboratively to organize a vehicle purchasing co-operative can be an effective way to achieve critical mass for gaseous-fuel vehicle deployment, garnering lower pricing, faster delivery times, and expanded fueling and service infrastructure. Assessing the needs and concerns of all potential participants through surveys and interviews is essential to identifying applications and vehicles that have the greatest potential for aggregated purchase. This includes understanding vehicle duty-cycles and fuel capacity needs and how existing or potential new fueling infrastructure might impact those needs. Those who organize aggregated vehicle purchase co-operatives may find it useful to contact others who have gone through the process to glean lessons learned and best practices. To assure a successful initiative, lead organizations’ bid solicitations should specify that vehicles meet federal emissions requirements and are designed and assembled in accordance with nationally recognized safety standards. If soliciting vehicle bids that involve multiple participants, it may be useful to request bundled bids and to clearly indicate warranty and service roles as well as responsibilities of each company involved in supplying vehicles. Because bundled bids require collaboration between supplier partners, it is helpful to communicate with all potential participants early in the process. Publicizing bid solicitations beyond the usual local channels to include national alternative fuel newsletters and association lists will likely result in more robust response and greater competition. Ultimately, coordination and information sharing with regional fleets, both public and private, can achieve critical mass for gaseous fuel vehicle deployment and support additional development of support services, including better local maintenance, service options, and fueling infrastructure.

Guide to Financing Alternative Fuel Vehicle Procurement

<table>
<thead>
<tr>
<th>Competitive RFP Best Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Plan for preventative maintenance in order to maximize residual value of fleet assets at their end of life.</td>
</tr>
<tr>
<td>• Write RFPs that can solicit the widest range of bidders and the most comparable and competitive pricing.</td>
</tr>
<tr>
<td>• Require staff training and local vehicle service capabilities.</td>
</tr>
<tr>
<td>• Frame RFP around solutions to be achieved rather than overly restrictive specifications, relying on bidders to come up with the most cost-effective way to meet fleet needs.</td>
</tr>
<tr>
<td>• Request respondents to pass through as purchase discounts some or all of any applicable tax credits they may claim upon a successful sales transaction.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cooperative Purchasing Best Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Convene fleet stakeholders and educate them on the benefits of cooperative procurement processes and how to incorporate detailed specifications requirements.</td>
</tr>
<tr>
<td>• Establish a regional working group to identify areas of common interest and compromise.</td>
</tr>
<tr>
<td>• Establish robust communication channels between the entity aggregating the cooperative procurement and end user fleets.</td>
</tr>
<tr>
<td>• Survey fleet managers and procurement officers to understand what vehicle types and financing mechanisms are most appealing and at what price points, and what opportunities/challenges to AFV deployment are most salient to them.</td>
</tr>
</tbody>
</table>
# Commercial Leasing Best Practices

- Understand the accounting and tax credit implications of leasing options.
- Include leasing decisions in your capital outlay and financing processes.
- Centralize leasing management within fleet management – to keep the leasing agreements in the hands of the staff responsible for using the leased assets.
- Develop a good understanding of each vehicle’s anticipated usage to align the lease terms with expected vehicle utilization (e.g. mileage per year).
- Customize the lease term to align with anticipated replacement cycles, both the anticipated duration of using the vehicles and the time of year that is most logical for replacement.
- Evaluate the rationale for current lease activity regularly. Is the mileage still appropriate for the terms of the lease? Is the financial situation that justified leasing the same? Train drivers on the lease terms and establish a thorough performance monitoring program – to make sure leasing is still financially viable for each vehicle.
- Develop leasing policies and procedures for the fleet. Which vehicles and applications/duty cycles are the best match for leasing? For purchasing?

# Third Party Financing Best Practices

## Conventional Debt Financing

- Make sure that the lender can take full advantage of the tax advantages that arise from lending to a public fleet, in order to be able to offer the lowest interest rate.
- Include a “non-appropriation” option to enable the government entity to terminate lease payments if it fails to be able to appropriate funds, and return the vehicle to the lender without penalty.
- Compare the loan interest rate to the fleet’s cost of capital. If the loan has a higher interest rate than the return the entity earns on its own investments, it is not wise to take the loan.

## Performance Contracting

- Align the interests of the ESCO or other third party with the interests of the fleet.
- Arrange for mutually agreeable measurement and verification (M&V) procedures for the contract, particularly in the case of performance guarantees.
- If there is a performance guarantee, ensure that you feel confident in the third party’s ability to stay in business in the event of a spike in fuel prices. Have a contingency plan for what happens if the third party goes out of business.
- Incorporate any necessary improvements in fleet refueling infrastructure, maintenance plans, and training plans into the overall agreement with the ESCO in order to ensure a successful initiative.

# Revolving Loan Fund Best Practices

- Properly capitalize the fund based on the anticipated need for investment in AFVs and other energy projects with financial paybacks – too large a fund may result in capital sitting idle, and too small may not accomplish the needs of the organization.
- Implement a fair and participatory stakeholder process for distributing the financial resources.
- Manage the fund in-house to alleviate the need for a financier, which reduces savings.
- Bundle fast payback with slower payback projects for an acceptable overall rate of return, particularly if the goal of the fund is maximizing emissions reductions while achieving a financial return.

# Bundled Procurement Best Practices
• Use bundled solutions in situations where the complexity of the deployment is beyond the technical capacity or time available of the procurement team.
• Carefully evaluate the total cost of ownership of bundled proposals to ensure that a fair deal is being negotiated on the individual components.

Guide to the Guides – Municipal EV Charging Resources

Strategies for Direct Public Investment in EVSE

• **Planning.** Resources listed in this column cover how an agency can evaluate the baseline availability of EV charging, collaborate with other developers of EVSE infrastructure, forecast future needs, and determine locations and quantities of charging ports that should be installed to fill gaps in the local or regional EV charging network.
• **Siting & Design.** Resources listed here cover considerations at the local site level, once specific geographic locations for EVSE investment have already been determined. This includes topics such as placement of EVSE on site, charging network compatibility, connectivity and communications, what level of charging to install, recommended features, vendor selection, how to manage installation costs, and more.
• **Finances & Operations.** Resources listed here cover business models for investing in EV charging, ownership options, how to assess likely utilization and payback periods, procurement options, whether and how to charge for charging, monetization of secondary value streams, user policies, and more.
• **MDVs and HDVs (medium and heavy-duty vehicles).** Resources listed here are focused on fleet applications, where agencies and other fleet operators are installing infrastructure for their own operations and intend to electrify medium and heavy-duty vehicles. Topics include approaches to charging, charger technologies, costs, power management strategies, and siting decisions for fleets.

Strategies for Enabling EVSE Growth

• **EVSE Incentives.** These resources describe what types of EVSE incentives can be offered by local governments, utilities, and municipal utilities to subsidize the cost of installing EV charging infrastructure.
• **Soft costs.** These resources include any actions that can be taken to reduce the intangible and/or difficult to quantify costs of installing EV charging infrastructure, which often stem from time-consuming processes or other process inefficiencies. Examples of such costs include time-consuming permitting processes, lengthy or redundant inspection processes, and customer acquisition inefficiencies. EV-ready codes are included in this category because they have been shown to significantly reduce the overall cost of later installing EV charging, by incorporating EV charging intentions into design considerations and reducing contractor labor in installation.
• **Workplace/Multifamily.** These resources focus on detailing best practices relative to the installation and management of EV charging infrastructure meant for non-public high-volume use. The development of these documents is meant to enable employers and building managers to install charging infrastructure, while providing guidance for navigating the barriers associated with EVSE deployment. This includes information on how to choose the appropriate equipment, how to manage operational costs, how to enforce charging policy, and how to take advantage of the incentives available.

Strategies for Utility Coordination
Utility Policy. These resources help stakeholders understand how they can engage with utilities and regulators on questions of the role of the utility, rate design, notification and forecasting protocols, and planning for grid system upgrades. Since the primary audience of this document is expected to be local stakeholders involved in hands-on implementation of local EV charging efforts, less emphasis has been placed on identifying resources that address this topic than the rest of the topics in the table.

Managing Costs & Grid Impact. These resources focus on ways that stakeholders who own EVs and/or EV charging infrastructure can manage their charging costs and reduce grid impacts. They address utility bill structures, renewables optimization and timing, demand charge avoidance, staggered charging strategies, and more.

Other products and resources

The F4F initiative produced a wide variety of materials as part of its grant deliverables. A small sampling of materials is listed below and are included in the Appendix.

<table>
<thead>
<tr>
<th>Product/Resource</th>
<th>Produced by F4F Partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-Step Procurement Process Framework</td>
<td>MARC</td>
</tr>
<tr>
<td>Sourcewell AFV Contracts Summary</td>
<td>Cadmus</td>
</tr>
<tr>
<td>Spreadsheet of AFVs Available Through F4F Procurement Programs</td>
<td>F4F Team</td>
</tr>
<tr>
<td>F4F National Opportunities Flowchart</td>
<td>F4F Team</td>
</tr>
<tr>
<td>One Page F4F Opportunities Flyer</td>
<td>NARC</td>
</tr>
<tr>
<td>F4F Outreach Clean Cities Toolkit</td>
<td>NARC</td>
</tr>
<tr>
<td>General PowerPoint Template</td>
<td>Cadmus/NARC</td>
</tr>
<tr>
<td>Clean Cities Coordinators Orientation Webinar</td>
<td>F4F Team</td>
</tr>
<tr>
<td>NJPA (Now Sourcewell) Ad for AFV Contracts</td>
<td>NJPA (Now Sourcewell)</td>
</tr>
<tr>
<td>ACT Workshop PPT and Handout</td>
<td>NARC</td>
</tr>
<tr>
<td>RFI from Potential Bidders Template</td>
<td>F4F Team</td>
</tr>
<tr>
<td>Gantt Chart for RFI Timing Template</td>
<td>F4F Team</td>
</tr>
</tbody>
</table>

MAJOR FINDINGS/LESSONS LEARNED

Lessons Learned

Cooperative procurement necessarily involves a balance of providing options for customization and encouraging standardization. Fleets in different parts of the country, states, and even metro areas may
have very different needs. But the base vehicle needed is sometimes similar across different fleet use cases. Differing environments can have small or large impacts on needed specifications (e.g. hot/cold climates, urban/rural roadway differences, etc.). Achieving the right balance of customization and standardization is a function of how strongly the various customizations are needed by fleets, how price-responsive the fleet is (e.g. can they “make do” with a vehicle that has different specs if it enables significant cost savings), what components of the vehicle have the biggest economies of scale, and what specifications impact the configuration of the alternative fuel upfit system.

Cooperative procurement also requires a balance between time-limited opportunities and long-term procurement contracts. Time-limited opportunities come with much higher risk and require aligning many essential pieces (e.g. municipal budgeting and purchasing cycles, external funding windows, vendor preparedness, strong outreach), though if they can be implemented, they can achieve significant discounts and accelerate vehicle deployment (e.g. the Fleets for the Future XL Hybrids order in 2017 through MAPC). Long-term procurement contracts provide the ability to establish fleet experience and trust in the vendors and the cooperative prior to large purchases. Long-term contracts also enable fleets to have a procurement solution ready to use whenever funding becomes available (e.g. the Volkswagen EMT funding) and provide a consistent process for fleet managers to follow which can save time.

Specific lessons learned are described below and have been grouped thematically. Since efforts to develop national cooperative contracts differ from regional efforts, the lessons learned have been grouped accordingly.

**Universal Lessons**

**Don’t Reinvent the Wheel**

1. The value of the expertise and experience of established cooperative procurement entities cannot be overemphasized. The development of a procurement requires long term contract support, which is most logically provided by an entity with a business model and a mission conducive to cooperative procurement. Prior to the Fleets for the Future grant, several of the regional councils had already hosted cooperatives or worked with local cooperatives. They were generally able to hit the ground running when they already had a procurement cooperative on board. Many of the strongest successes of Fleets for the Future were the result of the enhancement of existing offerings from established cooperatives, both at the national and regional level.

**A Diversity of Options is Necessary**

1. Although many states and procurement entities have contracts for vehicles that public fleets can use, many municipal and other public fleets prefer to evaluate a wide range of procurement options to find the best source for alternative fuel vehicles. While some states are scaling up their offerings of AFV contracts, others are scaling back in deference to buying cooperatives. State contracts may only carry certain types of AFVs and infrastructure and may not have the broad range of available

---

3 For instance, upfitting a large order of Ford Transits (e.g. with XL Hybrids systems) could help the upfitter order all the same parts for its retrofit kits, and it would not matter in the least whether half of the vehicles are spec’d as cargo vans and the other half as wagons, what the roof height was, whether ADA lifts were required, etc. On the other hand, if you wanted to order some vehicles with different wheelbases, cab configurations, and other customizations, it may require different parts for the alternative fuel upfit kit and preclude economies of scale.
makes and models that a full-service cooperative has. Therefore, there is a strong case to be made for increased roles for national purchasing cooperatives.

2. Offering a diversity of vehicle platforms, vehicle makes, fuel types, and financing options, and ensuring that provisions are made to have local maintenance and warranty service in every metropolitan market served by the contract, is important for recruiting potential fleet customers. Full catalogue procurement contracts that enable vendors to add new products and new model years at will are an important technique for ensuring the diversity of products meets the specific needs of a wide range of purchasers.

3. Developing contracts for base vehicle platforms with optional customizations is an effective way to aggregate demand without eliminating the opportunity for vehicles to be customized to match individual fleets’ needs. This is the way that many of the Sourcewell contracts are set up.

Significant Education Efforts are Necessary, Both on Procurement and Alternative Fuels
1. Many fleet managers may not be aware of the legal statutes in their state that enable cooperative procurement and may simply assume that they are required to buy from state contracts or issue their own RFP. Purchasing cooperatives such as Sourcewell can educate local procurement staff to help them understand how cooperatives are compliant with typical local government procurement requirements. If further education is needed, Clean Cities Coordinators, peer governments, and regional councils can all assist.

2. Fleet managers and dealerships have varying degrees of knowledge about alternative fuels, depending on whether they have any previous experience purchasing AFVs. Those that have not yet used alternative fuels need reassurance to feel comfortable that these new vehicles will not adversely affect their operations. Clean Cities Coalitions can provide reassurance in the form of case studies of respected peer fleets, clear knowledge and engagement from the dealership, following practices such as going with the most reputable vendors (and insisting on Environmental Protection Agency or California Air Resources Board certifications) to minimize chances of frustrations, ride and drive events, and many other strategies.

Economies of Scale (and the Value Proposition of Cooperative Procurement) Vary from One Vendor to the Next
1. Niche OEMs and early-stage companies that are trying to scale up are more likely to engage with a cooperative procurement project and implement outside the box initiatives. These companies are best able to offer discounts for small- and moderate-volume orders because they are accustomed to “one-off” purchases and could achieve price breaks on their own inputs and economies of scale from orders as small as a few dozen vehicles. For instance, the order of magnitude necessary to realize component savings for some autogas (LPG), compressed natural gas (CNG), and plug-in hybrid electric vehicle (PHEV) upfitters can be as low at 25 units if they are all the same. Even when wheelbases/and fuel storage sizes change, the same injectors, regulators, and wiring harnesses are common to each engine platform and layout.
2. Although AFV upfront purchase costs remain higher than conventional gasoline and diesel vehicles, savings may be achieved when offered within a cooperative procurement program due to the economies of scale of such cooperatives and the reduced customer acquisition and contracting costs.

**Lessons Specific to Implementing Regional Procurements**

**Education and Outreach is Paramount**

1. Fleet managers and dealerships have varying degrees of knowledge about alternative fuels, depending on whether they had any previous experience purchasing AFVs. It is important for this education and outreach to occur early and frequently and from sources fleet managers know and trust (e.g. their peers, preferred vendors, impartial technical experts). Local Clean Cities Coalitions are a great match for assisting their stakeholders in joining in a cooperative purchase.

2. Those implementing cooperative procurements can use strategies such as providing municipal fleet case studies (local examples in the region, when possible) with information on return on investment and operations and maintenance changes. These can be used as an opportunity to facilitate peer connections to contextualize the potential transition to alternative fuels.

3. Issuing an RFI before a bid or RFP to gauge potential interest can help educate procurement staff on the breadth of industry options and the pros and cons of differing approaches.

**Recruiting Enough Participation to Warrant a Cooperative Purchase Requires Significant Strategy and Effort**

1. Large fleets can be used as anchors for the procurement, ensuring that vendors are interested in bidding and that economies of scale can be achieved. The organizer of a cooperative purchase should align the purchasing schedules of both large and small fleets (i.e. municipal and state agency purchases in the case of MAPC’s program) to enable smaller, less resourced fleets to advance alternative fuels in their fleets.

2. Mandates from leadership are critical opportunities to bolster participation. Encourage municipalities to issue green fleet directives from their municipal chief executives. With clear indication of a mandate from the top, sustainability and energy managers or public works directors will be empowered to get the support of more reluctant staff on board with alternative fuel vehicles procurement.

3. Developing contracts for base vehicle platforms with optional customizations may be a more effective way to aggregate demand without eliminating the opportunity for vehicles to be customized to match individual fleets’ needs.
Timing and Alignment with Funding Opportunities and Vendor Sales Cycles will Increase Odds of Success

1. We found that many fleets were planning to “wait and see” as the project progressed, as many of them were looking forward to the opportunity to leverage VW Environmental Mitigation Trust funding. Organizers of cooperative procurements should identify upcoming federal, state, and local funding opportunities and develop procurement contracts that are ready to use as soon as funding is available (e.g. follow the Diesel Emissions Reduction Act grant cycle, your state’s CMAQ funding process, and the cycle of your state’s EMT funding over the next ten years).

2. Dealerships’ ability to offer deep discounts may be limited and confined to certain periods in their sales cycles (e.g. bid assistance varies month to month, dealers may have certain motivations for clearing out current model year vehicles to make room for the new model year, and other strategic factors may be at play that will not be clear to the purchaser). If dealership partners and/or multiple OEM programs are desired, anticipate a smaller discount. If deeper discounts are desired, negotiate directly with OEMs and/or large dealership groups under common ownership.

All Stakeholders Need to be Ready to Participate

1. Fleet interaction and involvement are key success factors in developing a successful regional procurement. Fleets are critical in determining specific vehicle types and alternative fuels pursued, as well as purchasing vehicles through the contract after the completion of a vendor RFP. Fleets for the Future efforts were most successful when they aligned with municipal budget cycles and funding opportunities. It is important to know when next year’s budgets are typically being developed by potential participants and to alert them in advance of the procurement campaign and its expected timing. Furthermore, it can be beneficial to encourage local fleets to prepare or update their fleet replacement plans so that they can be prepared to participate.

2. Vendor outreach is imperative to make sure that all the players in the alternative fuel value chain have enough time to coordinate. Since public sector fleet vehicles often involve significant customization needs, they go through a complex build process that involves chassis OEMs, body OEMs, manufacturers of aftermarket retrofit systems, installers of these systems, body upfitters, dealers, and more. As soon as it is decided that you will be implementing a cooperative procurement, the research and engagement phase should involve not just outreach to potential customers. Significant outreach to vendors is also necessary so that when an RFP is issued, a sufficient number of respondents will have formed the necessary relationships and agreements to bid full vehicles and turnkey solutions for fleets.

3. Unforeseeable events may require timeline adjustment and flexibility. Factors outside of local control such as tariffs, inability to secure funding, and regional product supply disruptions may all temporarily preclude a successful bulk procurement. For instance, hurricane response was cited by some vendors as a reason they were not able to respond to the NCTCOG RFP.

Communications – Education and Outreach Programs

Successful AFV procurement programs can only be achieved when accompanied with a strong educational component. The need for general education and outreach education remains paramount, as
fleet managers and dealerships have varying degrees of knowledge about alternative fuels, depending on whether they had any previous experience purchasing AFVs.

**CONCLUSION/IMPACT**

The Fleets for the Future initiative generated advancements in alternative fuel and advanced vehicle technology markets through its work to improve and enhance public aggregated procurement processes. At the end of the grant period, there are a large number and a wide-variety of alternative fuel vehicle options available in most vehicle classes (see a full list in the Appendix, Item I, Number 1), whereas there were significantly fewer AFVs options available in regional and national cooperative purchasing programs prior to the project start in 2016. The impact of the F4F efforts can be summarized best by reviewing the proven benefits of the regional and national cooperative procurements, lessons learned, and efforts to sustain the project goals.

**Project Sustainability**

Key elements of the F4F initiative have a strong likelihood to sustain its overall goal established during the U.S. DOE aggregation procurement challenge grant. The regional, national, and industry partners will continue to engage their local government stakeholders through their support networks. The best practices guides will continue to be promoted through F4F partner websites, including the project site hosted by NARC. Specific online resources that were developed by F4F partners will also be maintained and promoted (e.g., Sourcewell alternative fuels landing page, the inclusion of AFVs in the greater Kansas City metro vehicle bid process, etc.). The F4F team will also encourage and assist their member local governments in exploring alternatives to diesel engine vehicles in future years.
APPENDIX

Note: These appendix items are all hyperlinked to their documents. You can also access this full listing of documents on http://www.fleetsforthefuture.org/final-report or http://narc.org/environment/reports/.

A. Illustrated Final Report
B. Fleets for the Future Application Workplan
C. 7-Step Strategic Procurement Process Framework
D. Greater Kansas City Pilot Evaluation Report
   1. Administrative Cost Savings Table
   2. List of AFV Options Available
E. National Procurement Plan
F. F4F Private Aggregation Procurement Request for Information (RFI)
G. F4F Research/Engagement Survey Documents
   1. F4F AFV Fleet Survey
   2. F4F Survey E-Blast
   3. Survey Responses
   4. Analysis of Survey Results
H. Best Practice Guides
   1. Fleet Transition Planning for Alternative Fuel Vehicles
   2. Electric Vehicle Procurement Best Practices Guide
   5. Guide to the Guides - Municipal EV Charging Resources
I. Information on AFVs Available Through F4F
   1. Spreadsheet of AFVs Available Through F4F Procurement Programs
   2. Sourcewell AFV Contracts Summary
   3. F4F National Opportunities Flowchart
J. Handouts and Templates
   1. One-Page Flyer
   2. F4F Outreach Clean Cities Toolkit
   3. General PowerPoint Template
   4. Clean Cities Coordinator Orientation Webinar PowerPoint
   5. NJPA (Now Sourcewell) Ad for AFV Contracts
   6. ACT Workshop PowerPoint and Handout
7. RFI from Potential Bidders Template
8. Gantt Chart for RFI Timing Template