Idle Reduction Strategies for Emergency Vehicles Webinar

January 30, 2018, 1:30-2:30 pm

Hosted by Dallas Fort Worth Clean Cities Coalition

Dallas-Fort Worth
CLEAN CITIES

FOR AUDIO PLEASE CALL INTO THE CONFERENCE LINE

1-800-250-3900 Pin: 442318#

Agenda

Dallas-Fort Worth CLEAN CITIES

- Fleet Success Story: City of Columbus, Ohio
- Low-Cost Technology Example: Intelligent Fleet Solutions
- Fleet Success Story: City of Euless, Texas
- Funding Opportunities: Metropolitan Area Planning Council / Fleets for the Future

City of Columbus Fleet Management Anti-Idle Initiative

GRIP System

THE CITY OF
COLUMBUS
ANDREW J. GINTHER, MAYOR

DEPARTMENT OF FINANCE
AND MANAGEMENT

System Requirements

- Officer safety
- Reduce idle time
- Allow all emergency equipment to function normally
- Climate control
- Automatic
- Data logging

Pilot Project

- 5 Test units from different manufactures
  - Havis Idle Right
  - Extreme Energy
  - Vanner Idle Watch
  - Zone Tech
  - Grip Idle Management

- All were tested on single officer vehicles for reliable feedback

How it was accomplished

- Driven from the top down
- Give and take
- Leading by example
  - Chief of Police had Grip installed on her cruiser
- Officer training and understanding
  - Training videos and manual
  - One hour of idle time is equal to 33 miles
  - .44 gal of fuel an hour at idle
- Tampering addressed

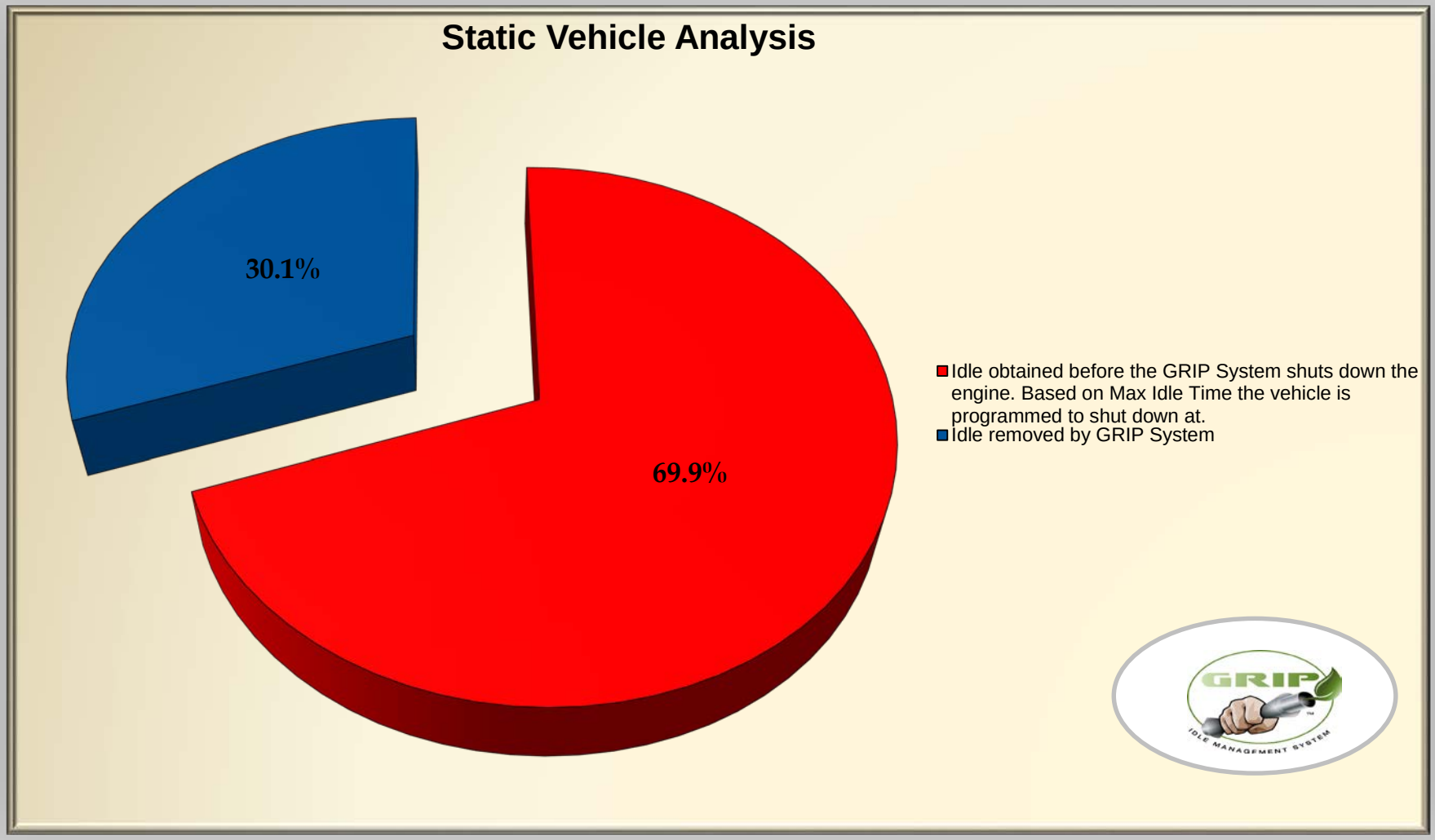
Cruiser Duty Cycle

- Police – 274 total units
- Fire – 3 total units
- 24/7 Lieutenants, Sergeants and Patrol
  - 24/7 units are on a five year rotation
- Freeway and K9 are single shift
  - Single shift are on a six year rotation

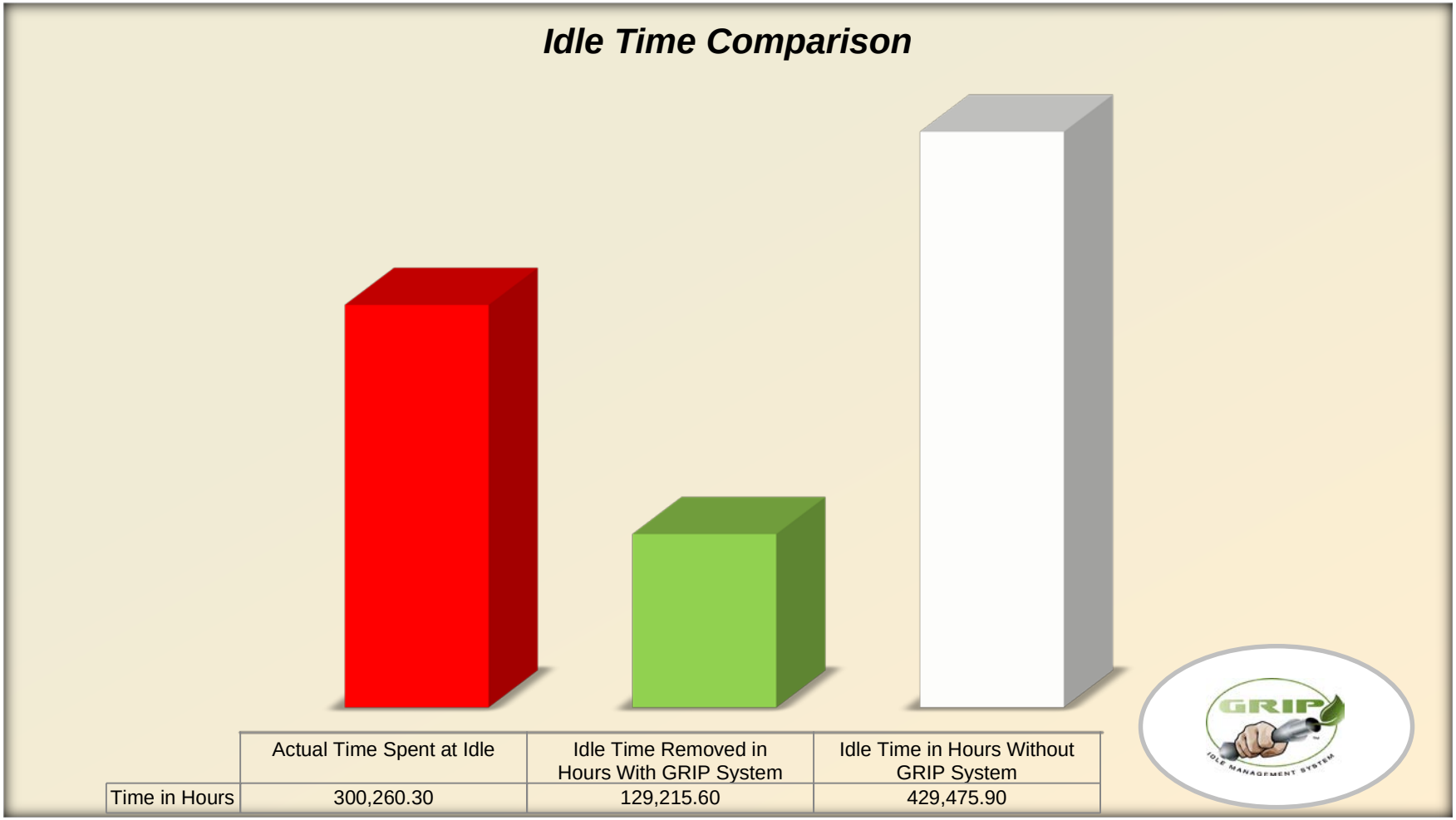
2016 data

- Cruisers demonstrated a life-to-date reduction in idle time of 30% or 129,215 hours
- Equates to saving approximately 4,264,115 miles on the cruisers by avoiding wear and tear on engines
- Saved estimated 86,800 gallons of fuel
- Reduced carbon emissions by 506 metric tons, the equivalent of removing 107 passenger vehicles from the road
- 2017 data available mid-2018

Idle Reduction

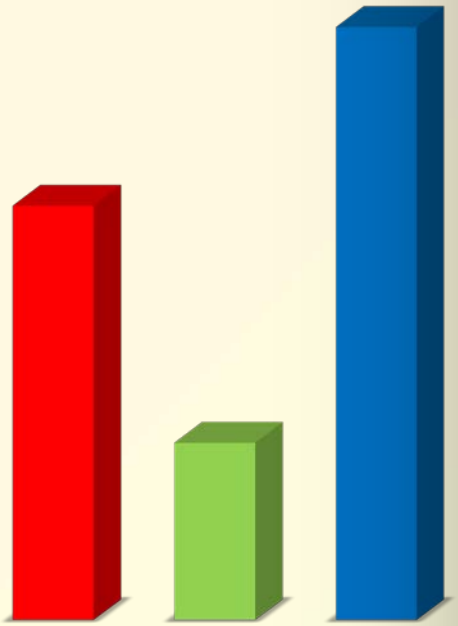


Idle Hours Reduced



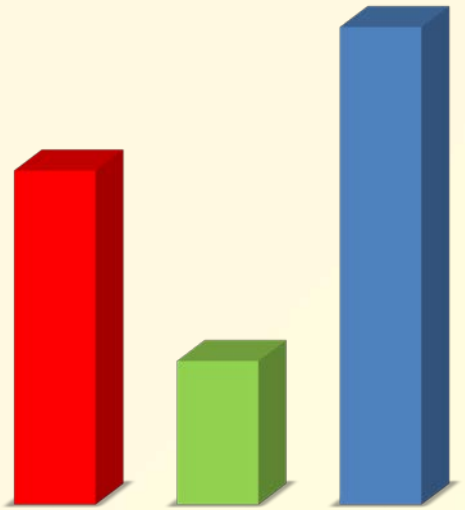
	Actual Time Spent at Idle	Idle Time Removed in Hours With GRIP System	Idle Time in Hours Without GRIP System
Time in Hours	300,260.30	129,215.60	429,475.90

Fuel Reduction in Gallons



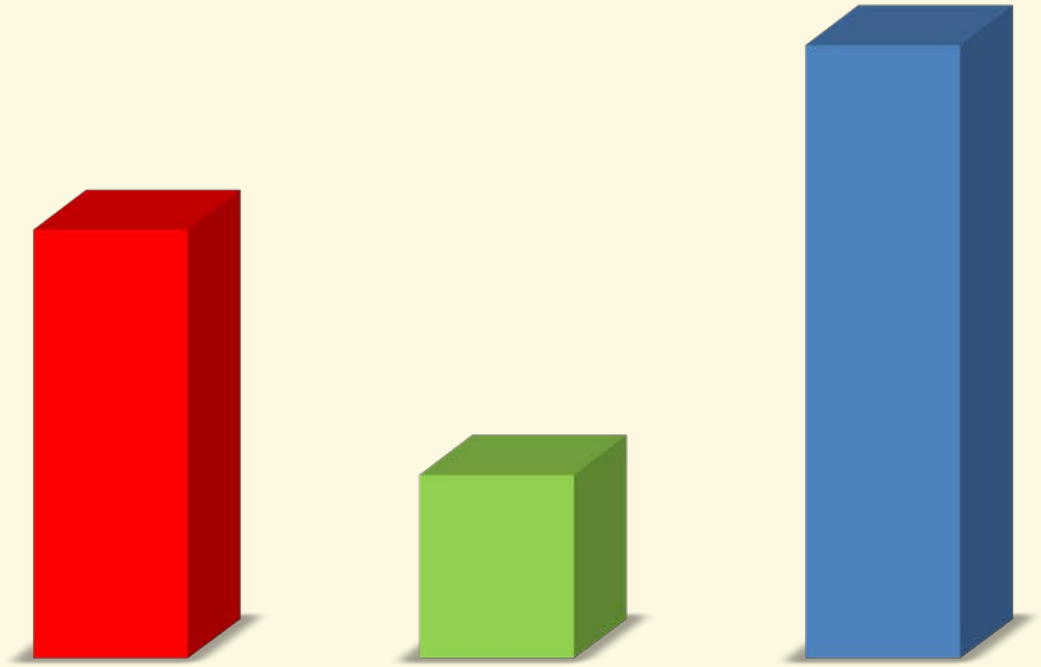
	Fuel Used in Gallons at Idle	Fuel Removed in Gallons by GRIP	Total Fuel in Gallons Without GRIP
Fuel Reduction in Gallons	201725.266	86811.5137	288536.7804

Fuel Savings in Dollars



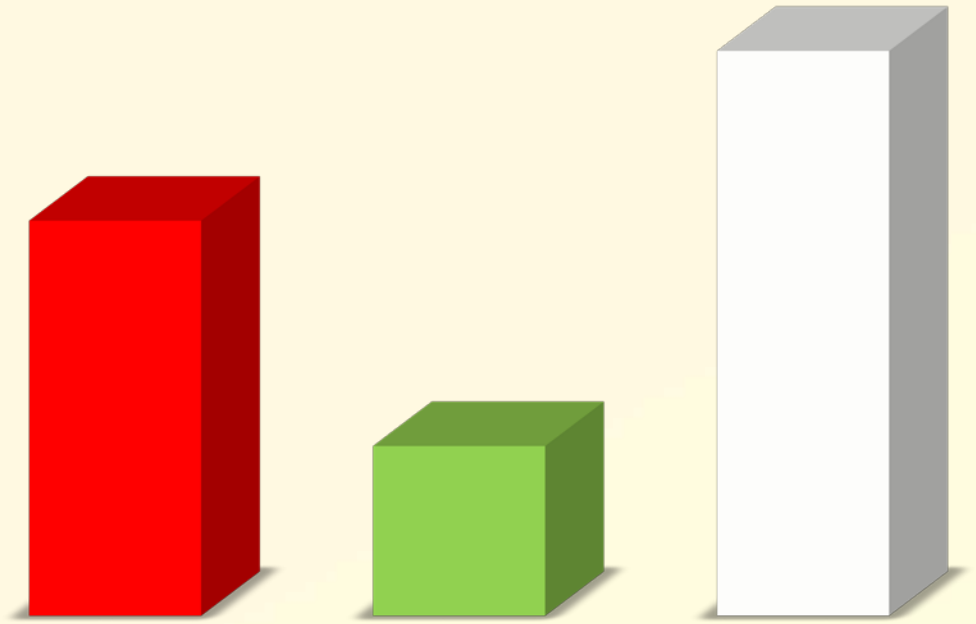
	Fuel Used at Idle	Fuel Savings with the GRIP System	Fuel That Would Have Been Consumed Without the GRIP System
Fuel Savings in Dollars	$474,054.38	$204,007.06	$678,061.43

Engine Wear Reduction



	Actual wear and tear on the engine due to idling	Total avoidance of wear and tear on the engine by using the GRIP system	Total amount of wear and tear on the engine from idling if the GRIP system was not installed
Engine Wear in Miles	9,908,589.9	4,264,114.8	14,172,704.7

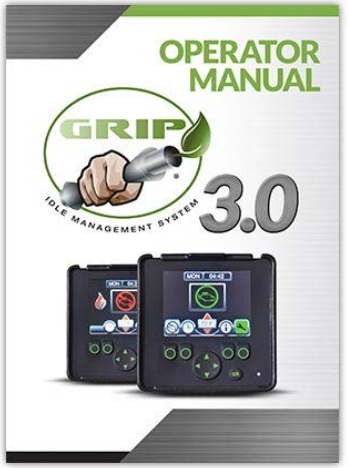
CO_2 Savings in KG

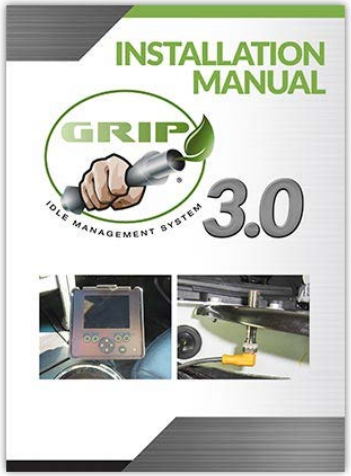


	CO2 Produced at Idle	CO2 Reduction with the GRIP System	CO2 That Would Have Been Produced Without the GRIP System
CO2 Reduction	1,795,556.59	772,709.29	2,568,265.88

Challenges

- New technology for police officers
- New technology for technicians
- Large learning curve
- Training!
- Advancement
  - Working on updates to new version
  - Battery technology and placement





Questions?

Kelly Reagan, Administrator

City of Columbus Fleet Management

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(614) 645-6254

THE CITY OF
COLUMBUS
ANDREW J. GINTHER, MAYOR

DEPARTMENT OF FINANCE
AND MANAGEMENT

intelligentfleet

solutions

Low cost solution for fleets

Total Fleet Solution

DERIVE Efficiency

Reduce your fleet's fuel consuption by up to 12% with Derive's low cost engine calibration

Fleet Efficiency with No Risk

- Low cost (money back guarantee)
- No powertrain risk
- 10 minute installation
- 100% reversible and transferable*
- Reduced maintenance costs

Application List:

- GM
- Ford
- Cummins

Truck or car, gas or diesel

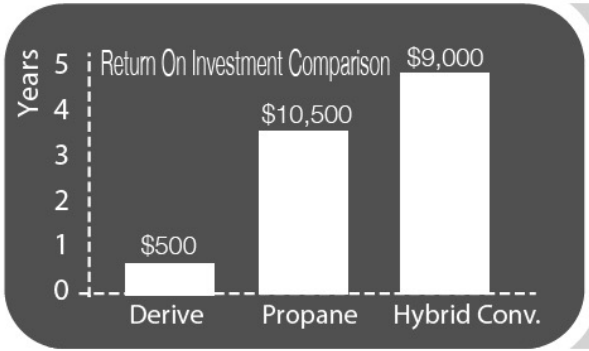
Total Fleet Solution

HOW IT WORKS -Efficiency in the form of an app…

Eco-Shift - Creating comfortale shift patterns

Idle Reduction- Reduce idle RPM and idle fuel consumption by up to 30%

SpeedLimiter - Control a vehicle's top-end speed anywhere from 25-85 mph



Financially Smart

- Shortest payback compared to other fleet efficiency products
- Can be used in conjunction with other technologies
- GUARANTEED 1 year ROI

City in FL Example

Selected vehicles

All department qualified vehicles
Estimated savings 10-15%

Cost: $400*1,000= $400,000
Savings in year 1= $600,000
Profit in year 1= $200,000

Savings over 5 years= **$2,600,000**
Savings over 7 years= **$3,800,000**

Year	Make	Model	Fuel Quantity	Fuel Amount	Fuel savings
2007	GMC		7493.8	$15,297.43	$1,835.69
2008	Chevrolet		3014.2	$5,768.13	$692.18
2015	Ford	Explorer	2503.4	$5,535.55	$664.27
2015	Ford	Explorer	2421.3	$5,370.29	$644.43
2006	Ford	F250	2367.9	$4,613.33	$553.60
2014	Ford	Explorer	2045.1	$4,580.25	$549.63
2014	Ford	Taurus	2046.6	$4,557.86	$546.94
2014	Ford	Explorer	2047.7	$4,434.74	$532.17
2014	Ford	Taurus	1728.9	$4,031.44	$483.77
2015	Ford	Taurus	1855.9	$4,018.67	$482.24
2014	Ford	Explorer	1810.6	$3,930.07	$471.61
2014	Ford	Taurus	1739.5	$3,870.01	$464.40
2015	Ford	Taurus	1771.4	$3,830.18	$459.62

Unique financing plan!

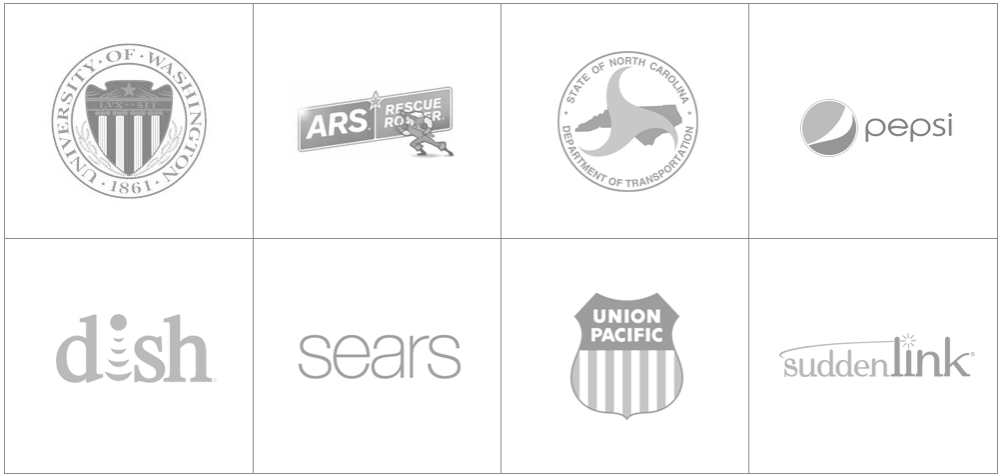
Payment	Total	Unit
Payment 36mo	$11,111	mo
Projected Savings	$16,666	mo
Monthly Cost Avoidance	$5,555	mo

No payment for 90 days

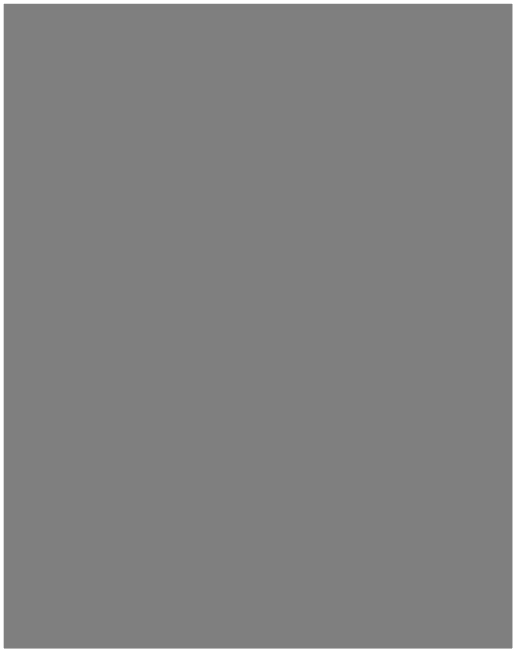
Fleets using this technology

- >2 Million Calibrations Sold to date
- 90,000 are Efficiency
- Guarantee Minimum 6% fuel savings
- Municipalities, Gov't, Corporate Fleets

DERIVE Efficiency

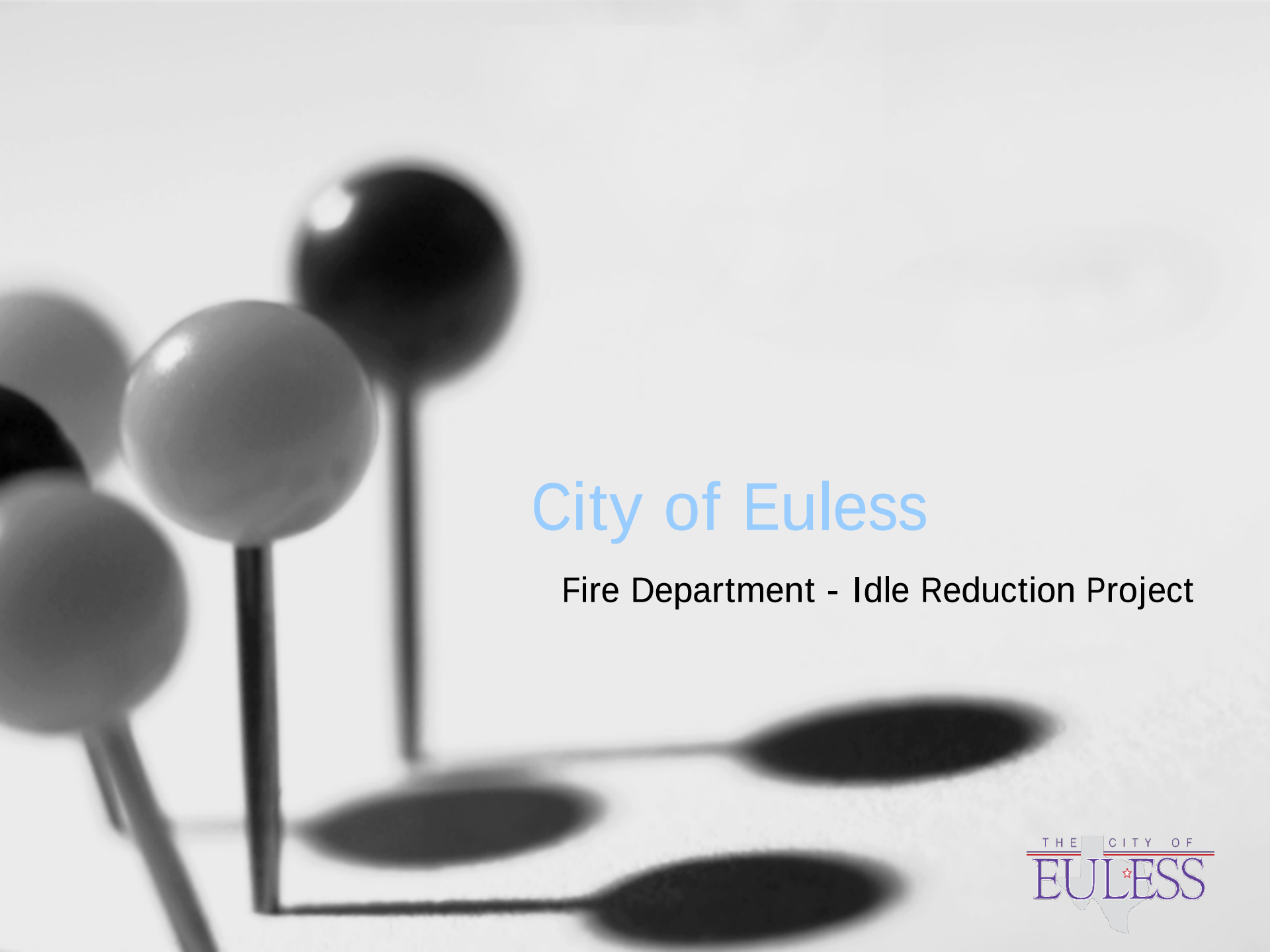


Contact Info



Intelligent Fleet Solutions provides free consulting services to fleets looking to reduce their fuel consumption, risk, and operating costs. Pricing and fuel reduction percentages are all assumptions and may vary based on actual data.

Thank You!



City of Euless

Fire Department - Idle Reduction Project

Daily occurrence at Fire Administration building.

- Station staff in training classes.
- Units / Gensets left idling for hours.
- Resulting in fuel loss and air pollution.
- How can we get control of this?

The city could reduce the idling time by...

- Setting time limits.
- Enforcement signage.
- Idle reduction equipment.
- City vehicle policy.

But we took a different approach...

...Thinking outside the box.

What if we brought the power to the vehicles??

- Each unit is already equipped with a shoreline plug.
- Units are plugged in while sitting in the station.
- Let’s do the exact same thing but outside!

Grant Funding Possibility?

- Contacted NCTCOG regarding possible funding.
- Funded through the Diesel Idle Reduction Program possible.
- Concept type - New idea under this grant opportunity.
- Project prepared and submitted.
- *APPROVAL!*

Implementation

- Construction time 2-3 Weeks.
- Each pole allows for (4) units to power-up.
- Power cords stored on site.
- Allows unit HVAC system and drug storage to remain functional while parked.

Success!

- 5,975 total hours in idle reduction to date.
- Estimated 3,585 gallons of fuel saved (+/-).
- Units remain heated or cooled and medication chilled.
- Maintenance costs – Virtually Zero!

More is Better...

- Additional power pole added under a TERP grant.
- Allowed for other Fire Apparatus to shut down and plug in for power.
- Up to (8) units can now hook-up.

Key Issues

- Wet weather concerns
  - To date there have been no weather related issues.
  - All outlets are GFI protected.
- Material procurement
  - All components available locally. RV supply locations.
  - Power is drawn from nearby electrical transformer.
- Employee Buy-In
  - Usage / hookup same as is in stations.
  - Savings can be readily seen.

What Next?

- Other areas of usage?
  - Recreation centers
  - TCC Fire Training Campus.
  - Hospitals.
- EV hook-ups?
  - City Hall campus.
  - Library.
  - Recreation Centers.
- Guest accommodations?
  - Hook-ups for joint training at Fire Administration.


Questions?

Clean Technology for Emergency Vehicles

Purchasing Opportunities to Green Your Fleet in 2018!

Megan Aki

Metropolitan Area Planning Council (MAPC)

January 30, 2018

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fleets for the future

MAPC: ABOUT US

- Regional Planning Agency
- 101 cities and towns
- 80+ employees
- Wide range of planning expertise

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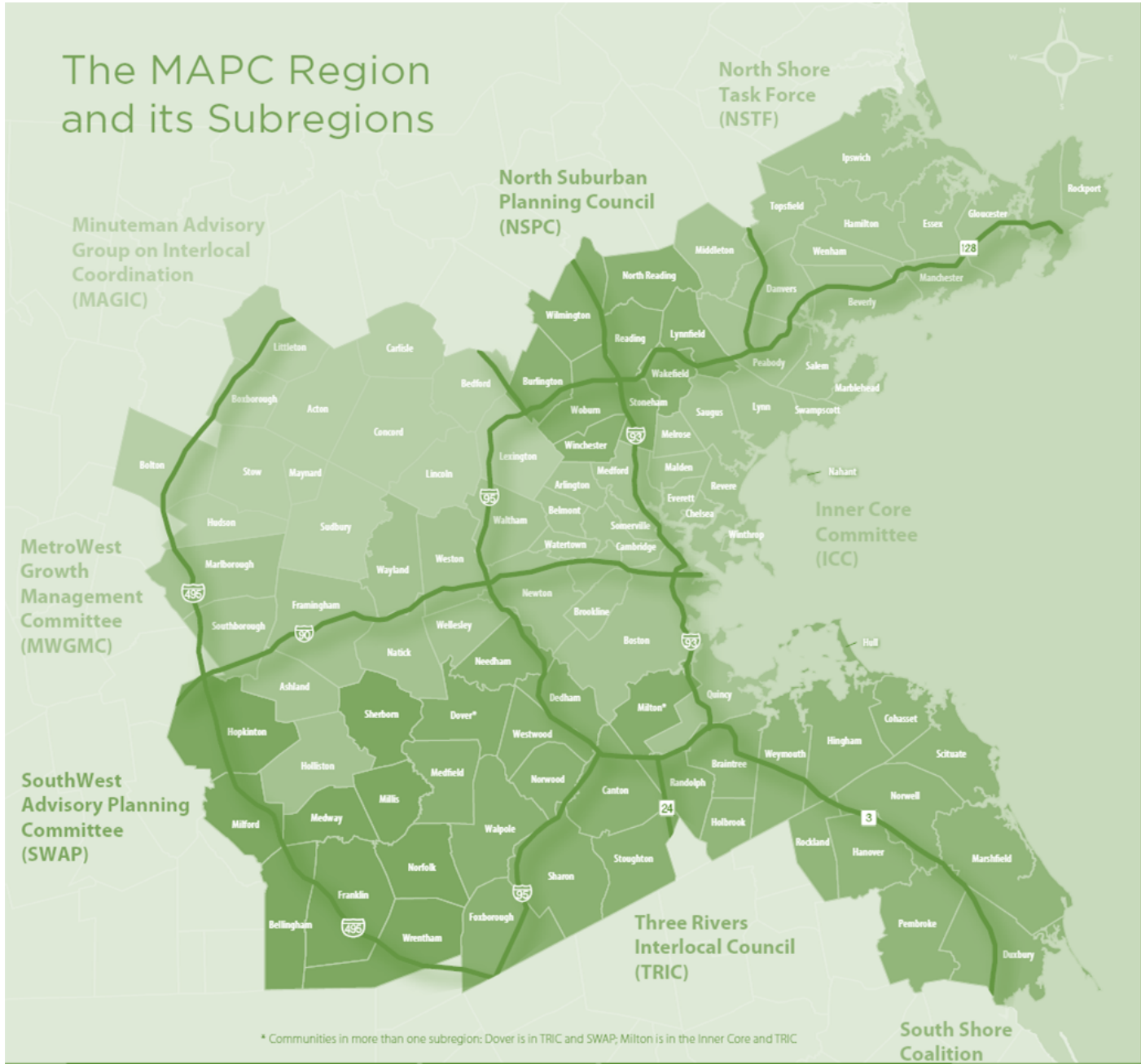
Smart Growth & Regional Collaboration



MAPC: CLEAN ENERGY

Regional Energy **Projects**

- ESCO Procurement
- Regional Solar Initiative
- LED Streetlight Purchasing Program
- Community Electricity Aggregation
- Green Mobility Program
- Energy Resiliency

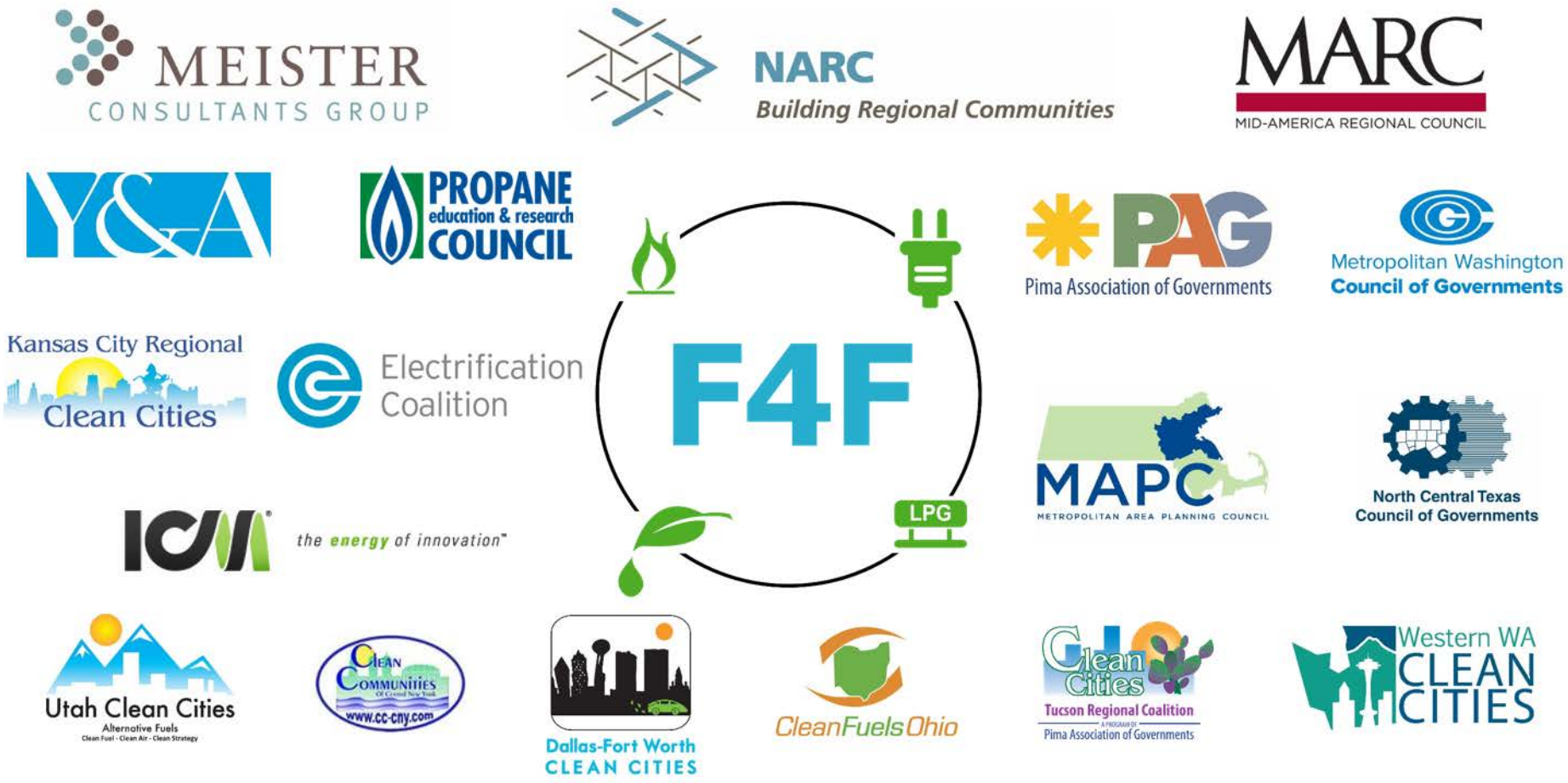
Climate and Energy **Planning**

- Connecting municipalities with incentives + plug-and-play programs
- Community energy and climate baselining, planning, and strategizing
- Outreach programming and education
- Net Zero Planning

Energy **Technical Assistance**

- Grant Writing
- Green Communities Designation
- Methane Leaks
- Solar Permitting and Zoning
- State and Local Policy
- Net Zero Guidance & Education

FLEETS FOR THE FUTURE



Accelerate the deployment of **alt. fuel vehicles (AFVs)** by reducing their incremental costs and building fleet capacity to plan procurements.

Propane, electric, and natural gas vehicles and infrastructure.

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Massachusetts Statewide Contracts

Alternative Fuel Options on VEH98 and VEH102

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STATEWIDE CONTRACTS WITH OSD

OSD maintains contracts procured for specific commodities and services which may be used by any executive department or eligible entity.

These contracts follow “Best Value Procurement.”

MGL Chapter 30B

- Cities and towns and others must follow M.G.L. c. 30B, although they may purchase from OSD statewide contracts.
- per M.G.L. c. 7, §22A and M.G.L. c. 30B, §1(c).

ELIGIBLE ENTITIES

PUBLIC ENTITIES NATIONWIDE

- Municipalities
- State agencies
- Ind. public authorities/quasi-public agencies
- Public libraries
- Public schools
- Public higher ed.
- Public hospitals
- Public purchasing cooperatives
- Non-profit certified orgs. working with Massachusetts

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WHAT'S ON VEH98?

Ford C-Max Energi
Ford Fusion Energi
Toyota Prius Prime
Hyundai Sonata Plug-In
Chrysler Pacifica (Van)

Plug-In Hybrid Electric Vehicles

Chevy Bolt EV
Chevy Volt
Ford Focus
Nissan Leaf
Firefly ESV

Battery Electric Vehicles

Honda Accord
Toyota Camry
Ford C-Max
Ford Fusion
Chevy Malibu
Toyota Prius
Toyota Prius Hybrid Wagon
Hyundai Sonata Hybrid
Chevy Volt
Toyota Highlander (SUV)
Toyota RAV4 (SUV)
Ford F150 Police Responder Hybrid Sedan

Hybrid Electric Vehicles

Chevy Express Cargo (CNG)
Dodge RAM 2500 (CNG)

CNG Vehicles

VEH98: Statewide Contract for Vehicle Purchases
18 local dealers – as of 1/1/2018

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WHAT'S ON VEH98?

Ford C-Max Energi
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Chrysler Pacifica (Van)

Plug-In Hybrid Electric Vehicles

Chevy Bolt EV
Chevy Volt
Ford Focus
Nissan Leaf
Firefly ESV

Battery Electric Vehicles

Honda Accord
Toyota Camry
Ford C-Max
Ford Fusion
Chevy Malibu
Toyota Prius
Toyota Prius Hybrid Wagon
Hyundai Sonata Hybrid
Chevy Volt
Toyota Highlander (SUV)
Toyota RAV4 (SUV)
Ford F150 Police Responder Hybrid Sedan

Hybrid Electric Vehicles

Chevy Express Cargo (CNG)
Dodge RAM 2500 (CNG)

CNG Vehicles

VEH98: Statewide Contract for Vehicle Purchases
18 local dealers – as of 1/1/2018

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WHAT'S ON VEH102?

Category 1
CHARGING STATIONS

Category 2
IDLE REDUCTION

Category 3
AFTERMARKET CONVERSIONS

VEH102: Statewide Contract for Advanced Vehicle Technology

WHAT'S ON VEH102?

Category 1
CHARGING STATIONS

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VEH102: Statewide Contract for Advanced Vehicle Technology

EMERGENCY VEHICLE TYPES

Solar Auxiliary Power System

Any 12V/24V vehicle battery/battery bank – emergency/EMT vehicles, police vehicles

Case Study

Hydraulic Hybrid Energy Recovery System (ERS)

Type III Ambulances on a Ford E350, Ford E450 or GM 3500 or GM4500 chassis

Case Study

Hybrid Electric Conversion System

Type III Ambulances on a Ford E350, Ford E450 or GM 3500 or GM4500 chassis

Case Study

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MAPC's Green Mobility Group Purchasing Program

Upcoming Opportunities & Next Steps

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GROUP PURCHASE ROUND 1

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XLhybrids

DOER
Massachusetts Department of Energy Resources

Accelerated Time-Based Discounts

DAY 1 – DAY 30 3%	DAY 31 – DAY 90 1.5%	DAY 91 – DAY 180 0%
Volume-Based Discounts	**Volume-Based Discounts**	**Volume-Based Discounts**
6+ vehicles 20+ vehicles 100+ vehicles	6+ vehicles 20+ vehicles 100+ vehicles	6+ vehicles 20+ vehicles 100+ vehicles

PROCESS & TIMELINE

FEBRUARY – APRIL	Public entities submit Letters of Interest & Vehicle Interest Lists
MAY	MAPC collects vehicle specifications for **ROUND 1**
JUNE	MAPC partners with OSD and DOER on **ROUND 1**
JULY	MAPC/DOER issue Statement of Work to XL Hybrids
AUGUST	30 day accelerated discount window closed 8/25
OCTOBER	60 day accelerated discount window closed 10/25
JANUARY 2018	Pricing Agreement with XL Hybrids closed 1/25/18

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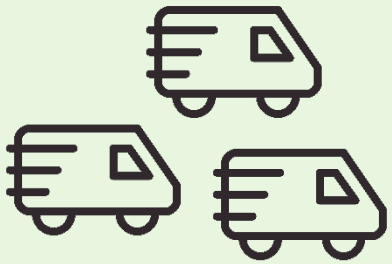
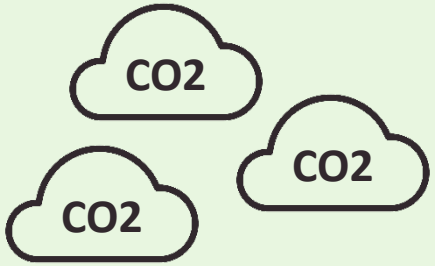
ROUND 1 RESULTS



28 vehicles
4 fleets

11-19% discounts
1-2k per vehicle



25-30% average fuel economy improvement

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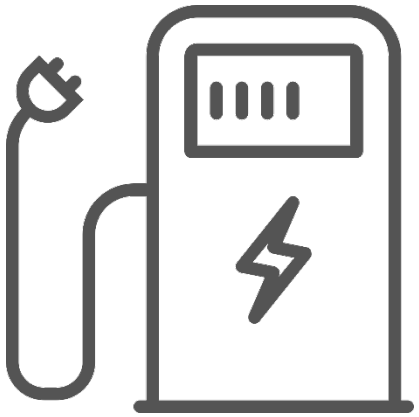
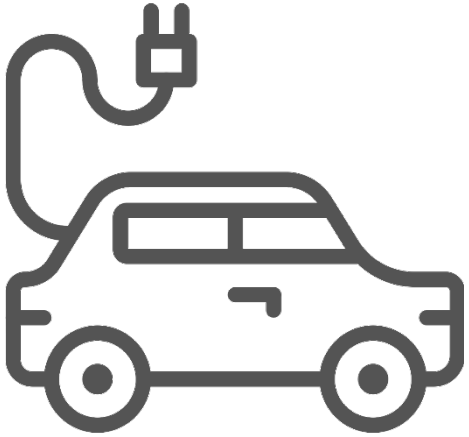
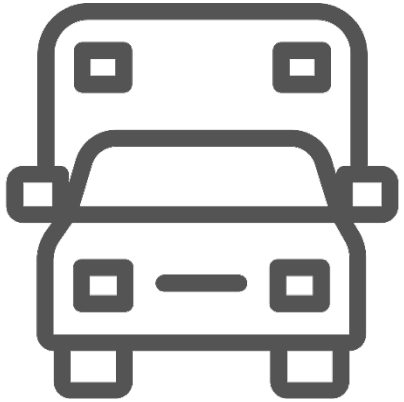
UPCOMING IN 2018!



Electric Vehicle Charging Stations



Electric Vehicles



Aftermarket Conversion Technology

Thank you!

If you're interested in participating in MAPC's Group Purchasing Program, fill our community interest survey at:

www.surveymonkey.com/r/GreenMobility

Megan Aki

Clean Energy Analyst, MAPC

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Thank You!

Webinar Presentations Will be Posted on the DFW Clean Cities Website at:

https://www.dfwcleancities.org/webinars

Dallas-Fort Worth
CLEAN CITIES

Questions? Contact Bailey at Bmuller@nctcog.org