MEP • MANUFACTURING EXTENSION PARTNERSHIP

Making an Impact on U.S. Manufacturing

Buy America Transit Supply Chain Connectivity Forum

APTA Bus and Paratransit Conference

Kansas City, MO

May 7, 2014

Agenda

8:00am	**Registration/continental Breakfast**
8:30am	Welcome Remarks and Forum Introduction *Clint O'Neal, Vice President, Business Recruitment Missouri Partnership, Missouri Department of Economic Development* *Dusty Cruise, Director Missouri Enterprise*
8:45am	U.S. DOT Keynote and Buy America Overview *Corey Walker, General Engineer, U.S. Federal Transit Administration*
9:30am	Q&A
9:40am	OEM Panel: Supply Chain Opportunities and Needs
10:40am	Q&A
10:55am	BREAK
11:10am	Supplier Panel: The View from Prospective Transit Suppliers
11:50am	Q&A
12:00pm	LUNCH
1:00pm	MEP Assistance Opportunities and Available Resources *David Stieren, Technical Manager, Program Development Office, NIST MEP*
1:30pm	Open Discussion: Transit Supply Issues and Opportunities
2:00pm	Intro to One-on-One Meetings* and Closing Remarks
2:15pm	One-on-One Meetings among OEMs and Suppliers
2:15pm	Networking Reception Concurrent with One-on-One Meetings
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U.S. Department of Transportation

Federal Transit Administration

KEYNOTE AND BUY AMERICA OVERVIEW

Corey Walker
General Engineer
U.S. Federal Transit Administration

FTA

FEDERAL TRANSIT ADMINISTRATION

Buy America Requirements

U.S. Department of Transportation

Federal Transit Administration

FTA's Buy America Requirements Overview

- Statutory Requirement
- Implementing Regulations
- "Steel and Iron" Rule
- "Manufactured Products" Rule
- "Rolling Stock" Rule
- Pre-award and Post-delivery Audit Requirements for Rolling Stock
- Waivers

Statutory Requirement: 49 U.S.C. § 5323(j)

- 49 U.S.C. § 5323(j)(1): "The Secretary may obligate an amount to be appropriated to carry out this chapter for a project only if the steel, iron, and manufactured goods used in the project are produced in the United States."

- 49 U.S.C. § 5323(j)(2)(C): "... when procuring rolling stock (including train control, communication, and traction power equipment) under this chapter—(i) the cost of components and subcomponents produced in the United States is more than 60 percent of the cost of all components of the rolling stock; and (ii) final assembly of the rolling stock has occurred in the United States."

Implementing Regulations

- 49 C.F.R. part 661
- 49 C.F.R. § 661.5(b)-(c): "Steel and Iron" Rule
- 49 C.F.R. § 661.5(d): "Manufactured Products" Rule
- 49 C.F.R. § 661.11: "Rolling Stock" Rule
- 49 C.F.R. § § 661.6 and 661.12: Certification Requirements

"Steel and Iron" Rule: 49 C.F.R. § 661.5(b)-(c)

- **Rule**: All steel and iron manufacturing processes must take place in the United States, except metallurgical processes involving refinement of steel additives.

- **Applicability**: This rule applies to all construction materials made primarily of steel or iron and used in infrastructure projects, e.g., transit or maintenance facilities, rail lines, and bridges.

"Manufactured Products" Rule: 49 C.F.R. § 661.5(d)

- **Rule**: For a manufactured end product to be considered produced in the United States:
  1) All of the manufacturing processes for that product must take place in the United States, AND
  2) All of the components of the product must be of U.S. origin. A component is considered of U.S. origin if it is manufactured in the United States, regardless of the origin of its subcomponents.

"Manufactured Products" Rule continued . . .

- **Definitions**: 49 C.F.R. § 661.3
  1) Manufactured End Product
  2) Component
  3) Subcomponent
- **Examples**
  – Appendix A to 49 C.F.R. § 661.3—End Products

"Rolling Stock" Rule: 49 C.F.R. § 661.11

- **Rule**: For rolling stock:
  1) The cost of components manufactured in the United States must be more than 60 percent of the cost of all components, AND
  2) Final assembly must occur in the United States.

"Rolling Stock" Rule continued . . .

- **Typical Components**: Appendix B to § 661.11 (Buses); Appendix C to § 661.11 (Rail)
  - For example:
    - Car shell
    - Engine
    - Main transformer
    - Traction Motor
    - Propulsion Controls
    - Interior Lining

"Rolling Stock" Rule continued . . .

- **Final Assembly**: 49 C.F.R. § 661.11(r)
- **Minimum Requirements for Final Assembly**: Appendix D to § 661.11

Pre-award and Post-delivery Audits of Rolling Stock

- Statutory Requirement: 49 U.S.C. § 5323(m)
- Implementing Regulations: 49 C.F.R. part 663

Buy America Waivers

- Foreign Sourced Spare Parts: Appendix A to § 661.11
- Other Waivers: Appendix A to § 661.7
  - Waivers under the "Buy American Act of 1933" (48 C.F.R. § 25.104)
  - Microprocessors, computers, microcomputers, or software
  - "Small Purchases Exemption"
- Waiver Requests

Buy America

- FTA Buy America Website: http://www.fta.dot.gov/legislation_law/12921.html

FTA
FEDERAL TRANSIT ADMINISTRATION

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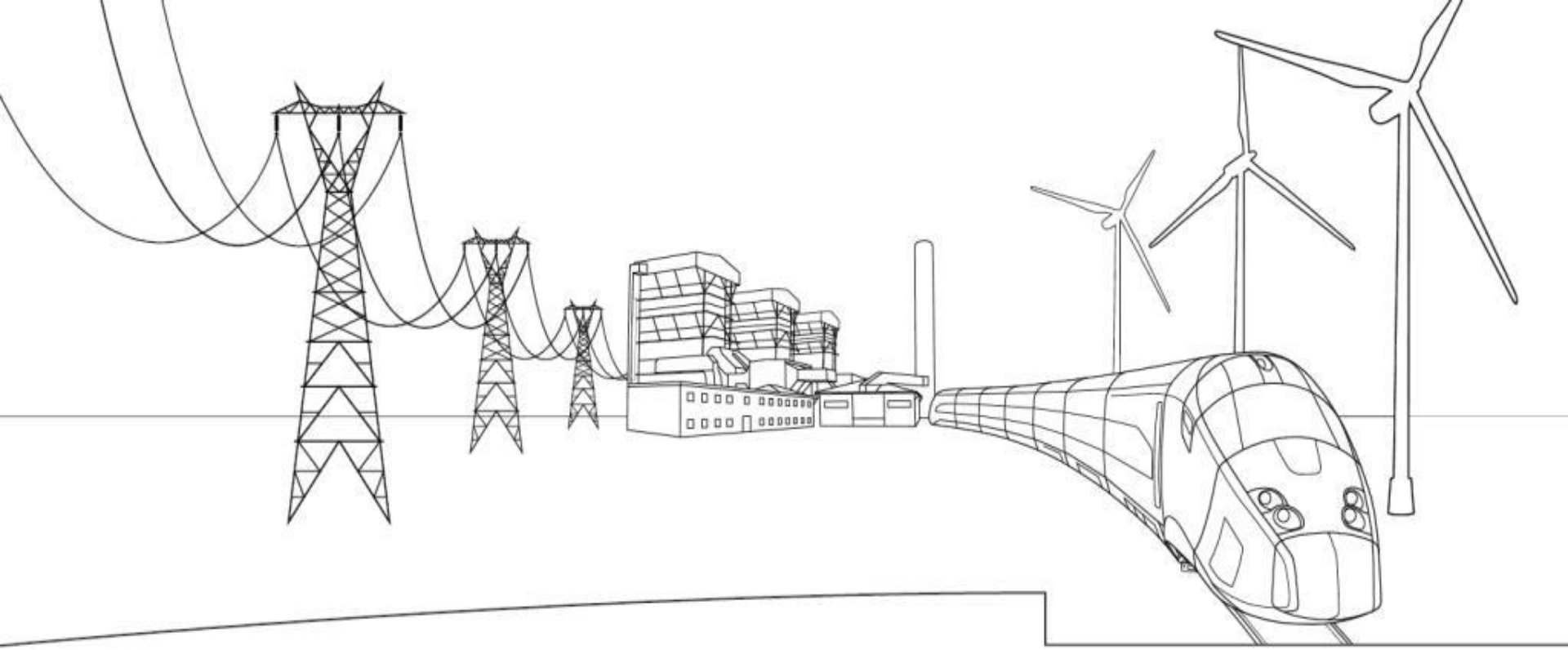
Transit Original Equipment Manufacturer and Tier 1 Supplier Panel

- Alstom Transport
- BYD Motors
- Gillig
- Kawasaki Motors Corp.
- Motor Coach Industries
- New Flyer Industries
- Nova Bus
- Proterra
- Vossloh Kiepe



Alstom Transport

2012/13

ALSTOM

Shaping the future

The Alstom Group: 3 main activities in 4 sectors

93,000 employees in 100 countries

Thermal Power and Renewable Power sectors

Power generation

Grid sector

Electrical grid

Transport sector

Rail transport

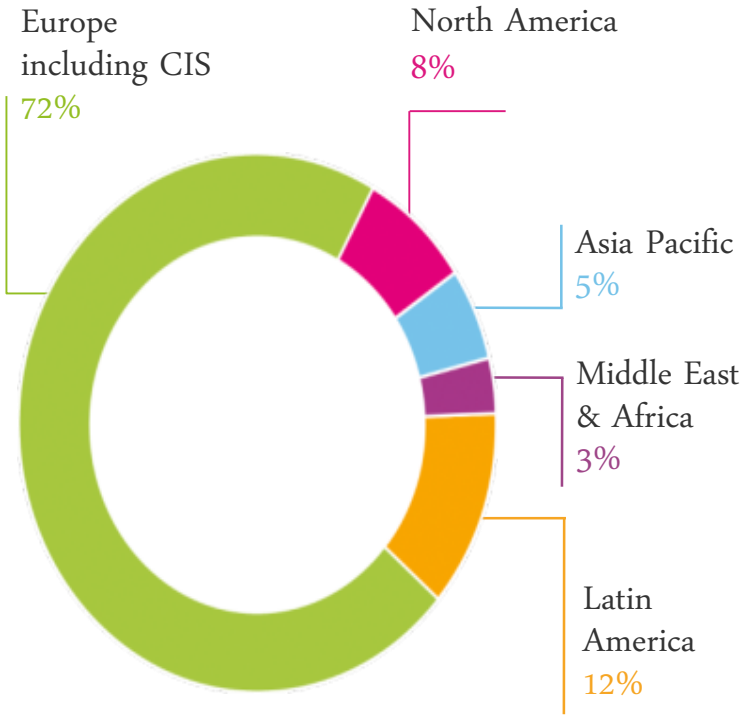
45% 9% 19% 27%

Total Alstom sales 2012/13

€20.3 bn

ALSTOM

Alstom Transport Orders Worldwide



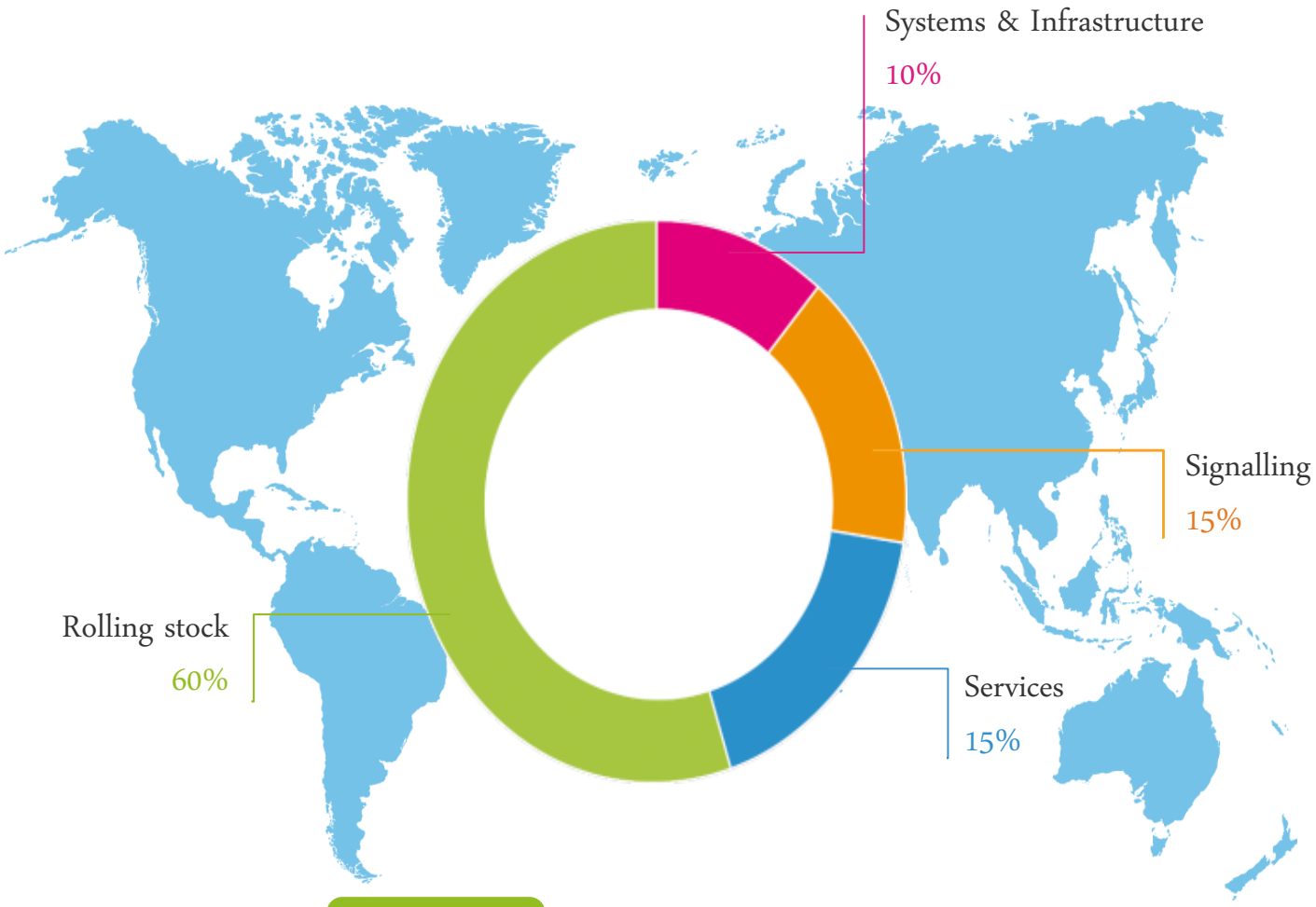
2012/13 total orders

€7.1 bn

Over 200 customers

ALSTOM

Transport Sales Per Product Line



2012/13 total sales

€5.5 bn

Transport Main Product Lines: Rolling Stock

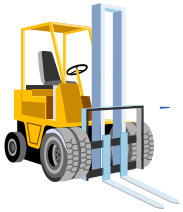
The largest range of the market: from tramway to very high-speed train…

ALSTOM

Alstom Transport Services Product Lines

Maintenance Service Contracts (Traditional & Condition Based)

Fleet Modernizations/Renovations



Supply Chain Solutions, Spare Parts, Materials Management

Alstom Services US & Canada – Main Sites

Ottawa, Canada

Train Assembly for Ottawa LRV

Chicago (Naperville), IL

TLS US & Canada Headquarters

Mare Island, CA

Renovation and Wreck Repair Center

Washington, DC/Boston, MA

Amtrak - Acela Supply Chain Solution, Technical Assistance, Warehouse Management

WMATA – 2k3k6k Warranty Support

Hornell, NY

Renovation Center

Newcastle, DE

Amtrak – AEM/HHP Supply Chain Solution, Technical Assistance, Warehouse Management

ALSTOM

Current Needs in Sourcing for Alstom

- Suppliers compliant with BAA (FTA and FRA both)
- SBE, DBE, Veteran-owned
- Partnerships in Leading Labor Cost Countries (LLCC)
- Suppliers that have:
  - An established Quality System
  - Dedicated manufacturing site
- Seeking the commodities:
  - Castings, forgings
  - Electrical Integration – Incl. Assembly and Testing setup

ALSTOM

BYD Provides Best ZEB Solutions

Who is BYD?

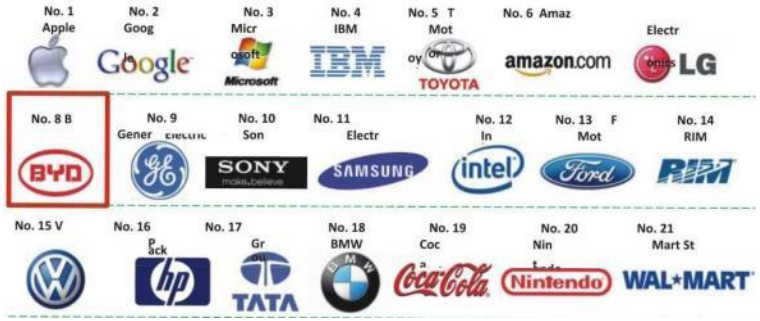
Automobiles

New Energy

IT

- USD 7.7 billion revenue in 2012, with 15,000 research engineers and 180,000 employees worldwide;
- 50% Public Share (Berkshire Hathaway owns 10% since 2008),
- No.1 rechargable battery manufacturer in the world
- No.1 Electric Bus manufacturer in the world.
- No 2 cellphone, tablets and laptop components manufacturer in the world.

The 25 Most Innovative Companies 2010



BYD Electric Bus Series 2014

- 40 ft transit electric bus
- 30 ft midi-size electric bus
- 60 ft articulated electric bus

Mass Produced 40 ft Electric Bus

BYD 40 ft Electric Bus US Cases

Stanford

New York

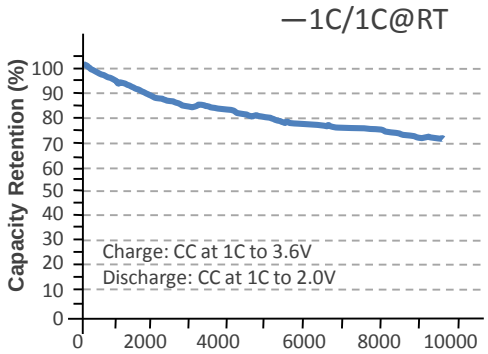
JFK

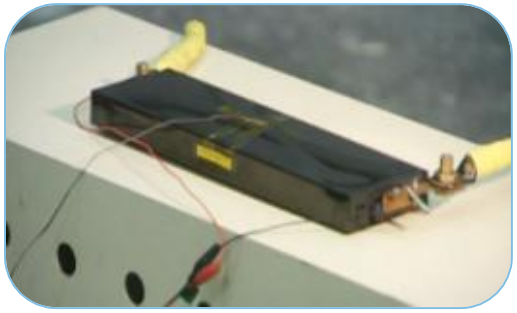
Miami

World's Safest & Long Cycle Life Fe Battery

BYD Lithium-ion Iron-Phosphate (Fe) Battery Safety Tests

Life Cycle Tests





Short Circuit

Strike

Pierce

Flames

High Temperature

Extrusion

Cycle Life of BYD Fe Battery Modules

Fabricated "**green**"
no caustic materials in manufacturing
no heavy metals
no toxic electrolytes
Standard pack modules
simplify **repurposing**

Electric Bus

RANGE CRITICAL:
First 4500 Cycles (12-15 yrs)

BYD e6
Electric Vehicle

- - - - repurposed

Recycled

OR

Green Disposal

Home Energy
Storage

ENERGY STORAGE:
Next 4500 – 7200 Cycles (13-27 yrs)

Fixed Mega-Watt Grid
Energy Storage Stations

First 40 ft All-Electric Bus to Finish Altoona Test

The BYD 40ft electric bus is in the final stages of the Altoona Structural Durability Test with all testing completing in May 2014. BYD will be the First OEM with a 40ft All-Electric Altoona Tested Bus!

BYD Supplier Qualification Query:

- BYD requires suppliers to qualify with local / regional laws and regulations.
- Once qualified, suppliers are evaluated on how well they can supply to BYD's specifications with steady and sustainable supply capabilities, while meeting the quality requirements set forth by BYD.
- BYD requires the supplier to remain accountable for the agreed-upon delivery dates.
- After delivery, BYD also evaluates suppliers' communication and support, including first-time installation and warranty.

Suppliers BYD is Looking For:

- DBE's & Prime suppliers that work with DBE's.
- Metal fabrication, electrical harness suppliers, fiberglass / lightweight composites manufacturers are specific examples of suppliers BYD is currently seeking.

BYD Supply Chain Contact Information

- **Jonathan Chavez-** Procurement Manager

  Email: Jonathan.chavez@byd.com

  Mobile: 213-379-3499

- **Jenny Jing-** Procurement & Logistic Manager

  Email: Jenny.jing@byd.com

  Mobile: 213-822-2716


GILLIG
GILLIG
CLEAN AIR TECHNOLOGY

Company Overview

Historical Overview

Privately held company

- Started in San Francisco in 1890
- Rebuilt after 1906 earthquake
- Always in the transportation business

Current location since 1968

- 300,000 sq. ft. on 20 acres
- 69% minorities and women

We are proud of:

- Our 124 year U.S. heritage
- Our happy customers
- Our business success

PROUDLY MADE IN THE USA

Suppliers Gillig is searching for:

AD FRAMES
Advertising Frames, Interior And Exterior, Aluminum Extrusion

CABLES
Power Cables, Battery Cables, Antenna Cables, Communication Cables

DOOR GLAZING
Custom Cut Flat Glass, Laminated and Tempered

FAN BLADES
Balanced Resins Fans For Radiator Cooling Applications

FIBERGLASS
Custom Molded Fiberglass Shapes

FIRE EXTINGUISHERS

FIRST AID KITS/SAFETY TRIANGLES

FOAM TAPES

GAS SPRINGS

HARNESSES
Large And Small Custom Harnesses, Wire Leads (Compliant Ipc-a-620)

HINGES
Stainless Steel Continuous Piano Hinges

INSULATION
Thermal And Sound Insulation

LOCKS & LATCHES
Southco Or Equivalent

METAL FABRICATORS
For Many Different Types Of Metal

RUBBER PRODUCTS
Masticated And Extruded

SCHEDULE HOLDERS
Both Plastic And Metal

SPEAKERS
Both Interior And Exterior

SUN SHADES
For Driver's Area, Windshield And Side Windows

TRANSITION DUCTS

VISORS
For Windshield Area

WIPER/WASHER KITS
Also For Windshield Area

GILLIG

Attributes of a Gillig Supplier

GILLIG

- **Gillig LLC: Original Equipment Manufacturer of U.S. transit buses**
  - Based in Hayward, California
  - http://www.gillig.com/
- **Supply Chain Contact Information:**
  - Purchasing Managers: (510) 785-1500
  - Address: P.O. Box 3008
Hayward, CA 94540-3008

Kawasaki

Kawasaki Motors Manufacturing Corp., U.S.A.

Rail Car Division

Kawasaki Motors Manufacturing Corp., U.S.A.
Rail Car Division

Kawasaki Motors Manufacturing Corp., U.S.A. (KMM)

Land Area:

Total: 335 acres
(Rail Car: 57 acres)

Factory Floor Space:

Total: 2,007,000 ft^2
(Rail Car: 753,000ft^2)

Location:

6600 NW 27th Street
Lincoln NE 68516 U.S.A.

Established:

1981
(Operation started on 1974 as Kawasaki Motors Company facility)
Rail Car: 2001

Products:

Rail Cars, Jet Ski Water Craft, ATVs, Utility Vehicles, RUVs, ATV & RUV Rims

Quality and Environmental System

- ISO 9001 Quality Management System
  Registered, December 2005
- ISO 14001 Environmental Management System
- Registered, May 2005


BUREAU VERITAS
Certification

Certification

KAWASAKI MOTORS MANUFACTURING CORP., U.S.A.
RAIL CAR DIVISION

THE MANUFACTURE AND REFURBISHMENT OF ROLLING STOCK AND COMPONENTS.

ANAB

Manpower

- Highly Skilled Workforce

Kawasaki
Kawasaki Motors Manufacturing Corp., U.S.A.

History

Aug 2000 - Announced plan to build Rail Car Facility
Nov 2000 - Began construction of Rail Car Facility
Nov 2001- Began Production of Rail Cars (NYCT R142A)
Jan 2002 - First Rail Car shipped from KMM
Nov 2002 - Completed last R142A for NYCT (120 Cars)
Dec 2002 - Completed last R143 for NYCT (8 cars)
Nov 2004 - Completed last R142S for NYCT (80 Cars)
May 2006 - Completed last double-deck coach for MBTA (29 Cars)
Feb 2008 - Shipped 500th Car (NYCT R160B)
Feb 2010 - Shipped 1,000th Car (PATH PA5)
Mar 2010 - Completed last NYCT R160B (650 Cars)
Mar 2011- Function Test Facility Operational
May 2011- Completed PATH PA5 Base Order (332 Cars)
Jan 2012 - Completed PATH PA5 Option Order (10 Cars)
Mar 2013 - Completed 1,500th Car (MNR M8)
Mar 2014 - Completed 126 R188 cars for NYCT
Present - Building 366 M8 cars for Metro North Railroad
- Building 528 WMATA 7000 Cars
Future - M9 Cars for Long Island Railroad

Supply Chain

Supplied by KHI

Truck Frame & End U/F

KHI

KSC

From Japan

Japanese Vendors

Supplied by KRC

Major Vendors

Sub Contract Parts

KMM
Made in America

Supplied by KMM

Parts

USA Vendors

Painting, Sheet Metal

In house Manufacturing

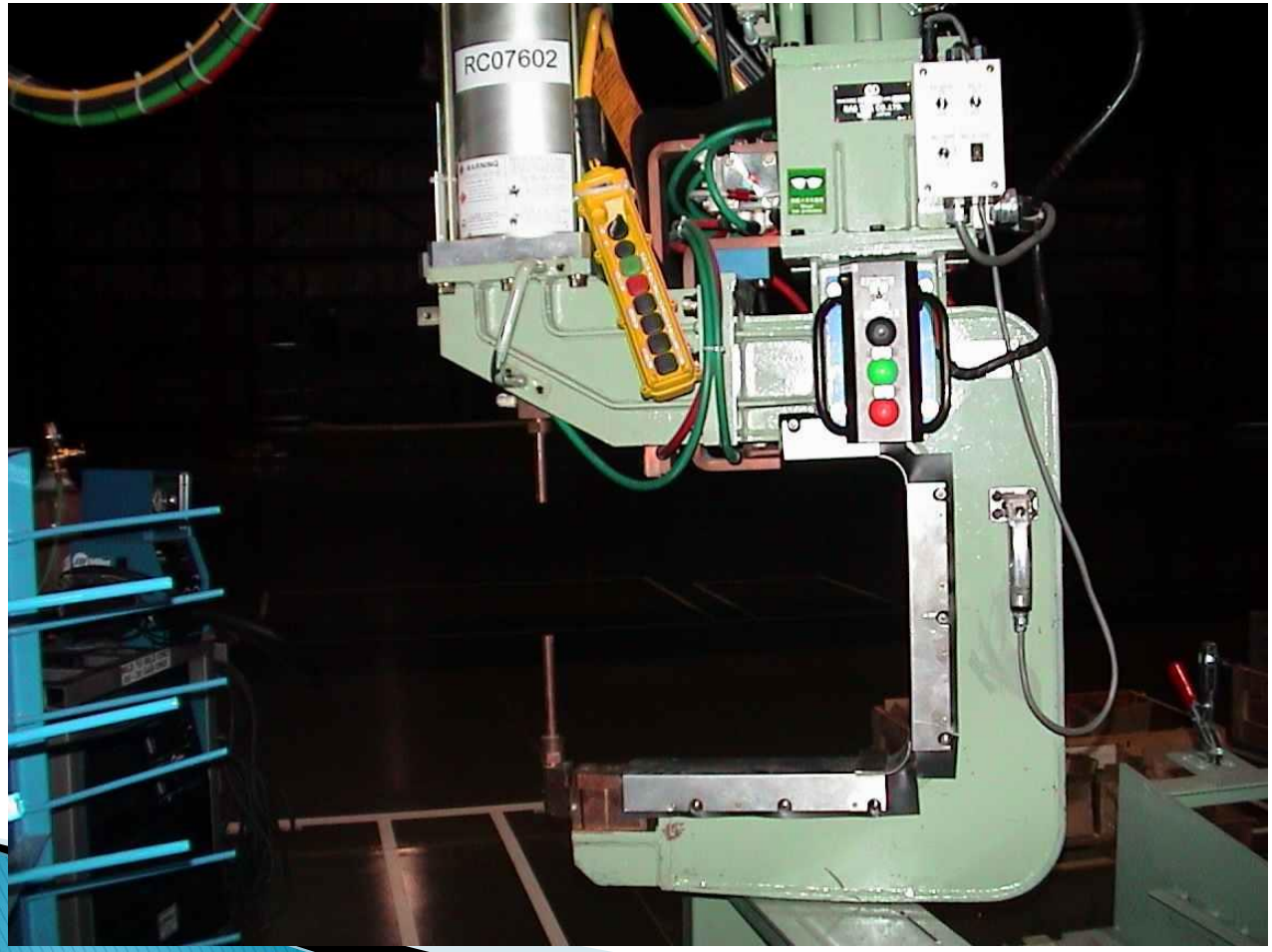
KHI-KMM Technology Transfer

Production Flow

Fabrication （A/B/F/G Lines）

U10 Robot(Plasma Cutting and Spot Welding)

Spot Welding Machine

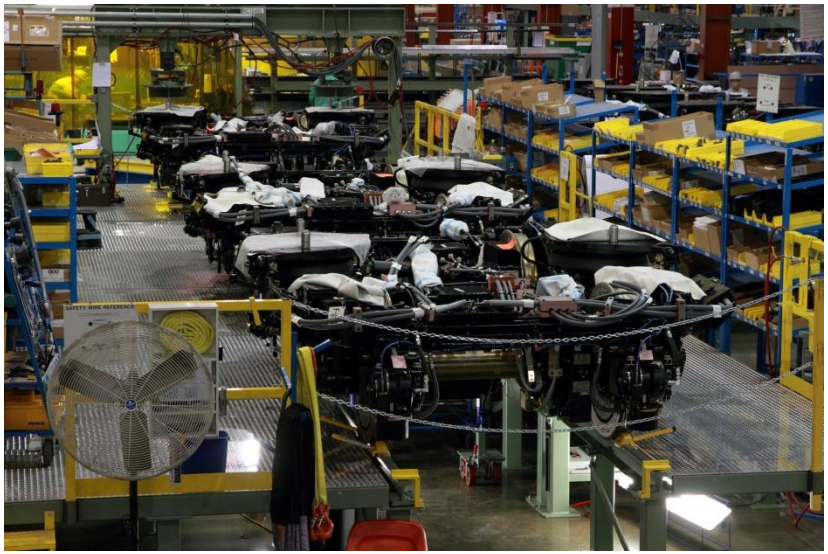


Automatic Spot Welding Machine for Side Panel

Automatic Roof Welding Machine

Interior Fitting （C/D/H/J Lines）

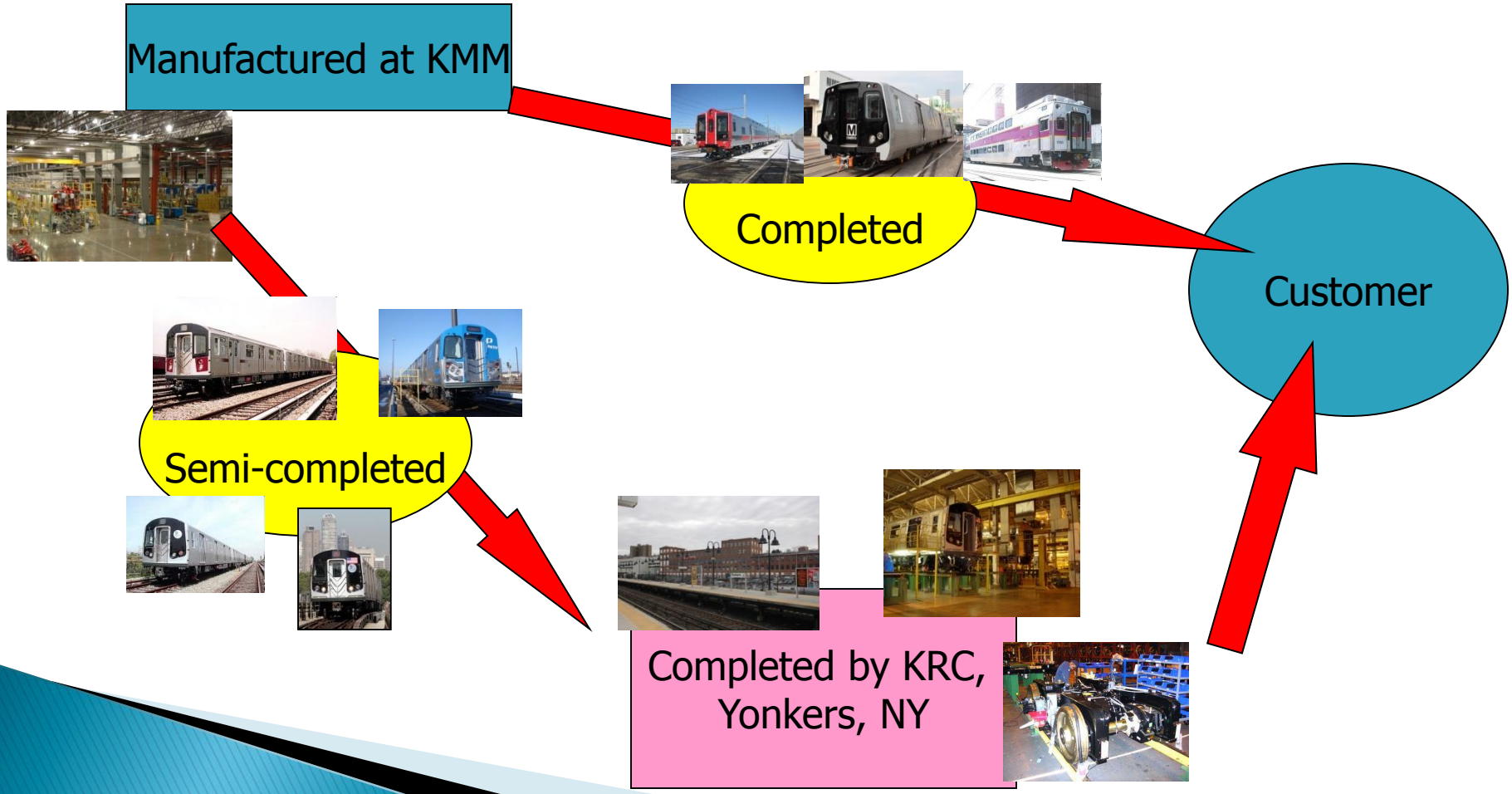
Truck Assembly and Testing



Water Tightness Test Facility

Function Test Facility

Ship out from KMM



Ship Out Crane

Ship Out by Truck to KRC

Ship Out by Roll-on Roll-off Trailer to Customer

Ship Out by Rail to Commissioning Site

MTA New York City Transit R142A/R142S (200 Cars)

MTA New York City Transit R143 (8 Cars)

First Cars Completely Fabricated at KMM (2002)

Massachusetts Bay Transit Authority Boston Double Deck Commuter Car (29 Cars)

First Car Transported to Customer by Rail from KMM (2004)

MTA New York City Transit R160B (650 Cars)

Port Authority Trans-Hudson PA5 (342 Cars)

MTA New York City Transit R188 (126 Cars)

MTA Metro-North Railroad M-8 (366 Cars)

Complete Static and Dynamic Function Testing at KMM

Washington D.C. Metro Area Transit Authority
WMATA 7000 (528 Cars)

Future – Long Island Railroad M-9

Kawasaki

Kawasaki Motors Manufacturing Corp., U.S.A.

Thank you very much

ありがとうございました。

Who We Are

- **Leading builder** of the best-selling **MCI J4500** and workhorse **MCI D-Series** coaches in the U.S. and Canada
- 2 primary business segments include **public sector transit agencies** with focus on commuter express service **and private coach operators**.
- **Pre-owned coach** inventory plus warranty, **maintenance and repair** available **at seven MCI Sales and Service locations**
- **Largest aftermarket parts network** through MCI Service Parts, Louisville, KY
- Serving tour, charter, scheduled and curbside service and commuter transit
- More than 1,700 employees in manufacturing, sales and support roles; approximately 600 in the U.S.

A Rich Heritage in Coach Building Excellence

MCI can trace its heritage back to 1928 when founder Harry Zoltok arrived in Winnipeg on his way west and decided to call the city home

In 1933, the company built its first coach

Harry Zoltok founded MCI in 1933

Businesses and Locations

Corporate Headquarters
Des Plaines, IL
Executive Offices/ Sales and Service Center

MCI LIMITED
Winnipeg, Manitoba
Engineering/Manufacturing
J4500/D-Series

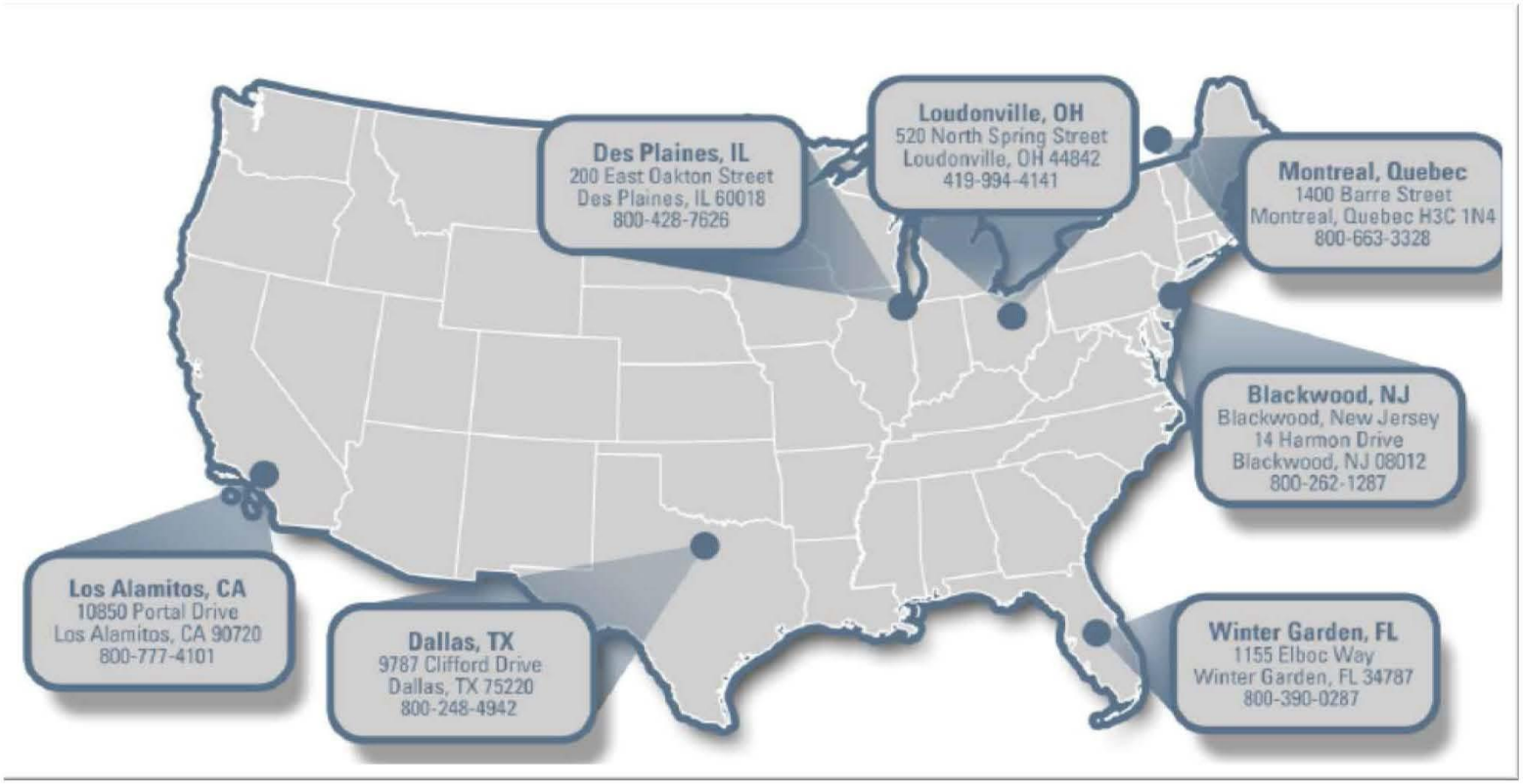
MCI
Pembina, ND
Manufacturing/Finishing
D-Series/ Commuter Coach

MCI Service Parts
Louisville, KY
350.000 square-feet
Warehouse/Distribution/Call center/ Training Institute

MCI Sales and Service
Eight locations, pre-owned coach inventory, maintenance and repair, parts pick-up

MCI Reliability Driven

MCI Sales and Service Centers



MCI

Reliability Driven

SETRA

MCI Brand Focus

*Our goal is to be **Reliability Driven**, in **product** and **support** and to build on MCI's position as the coach leader in the US and Canada with coaches that deliver the **Lowest Total Cost of Operations**.*

MCI Models

J4500 # 1 best seller

D-Series
All time best seller

Commuter Coach
Clean diesel, Hybrid or CNG

MCI
Reliability Driven

SETRA

MCI® Commuter Coach

Safety and Style

Designed for commuter express, built for highway speed

- Forward-facing seating and a 42% greater seating capacity than a typical transit bus
- Available in clean diesel, hybrid or CNG
- Offers a highly competitive per-seat price, plus low cost of operation and the best mean distance between failure (MDBF) rate over all other types of bus models

MCI Reliability Driven

D4500 CNG Commuter Coach

MCI
Reliability Driven

MCI® D4505/D4005

The Workhorse

More units on the road in the U.S. and Canada than any other model — ever

- Designed for the highway
- Proven line-haul and private/public partnerships performer
- Buy-America compliant
- ACTIA multiplexing system for easier maintenance
- Optional features from an auxiliary heater for more efficient cold-weather startups to power outlets and Wi-Fi

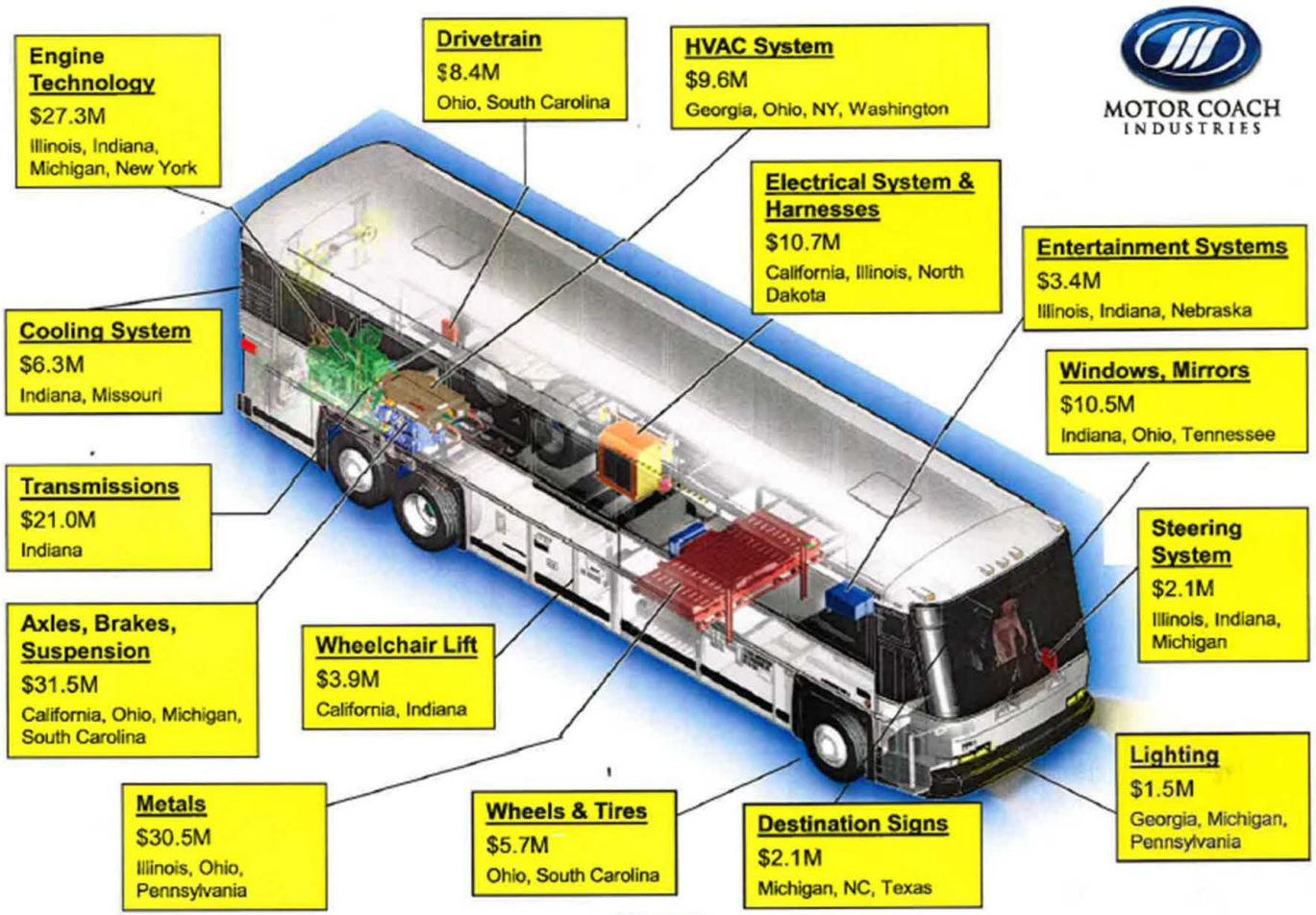
MCI® J4500
Refined Design

Best-selling model for 10 years

- Premium workhorse reliability
- Modern, distinctive styling with redesign in 2013 for elevated presence, LED headlamps, smooth rear cap
- Spiral stairwell, optional wood-grain flooring, leather seating, power outlets and Wi-Fi satisfy ridership demands
- Flexibility for tour, charter, line haul and curbside service

MCI Reliability Driven

MCI Areas of US Spend



MCI
Reliability Driven

Areas of Interest

- Current Commodities of interest to MCI
  - Air System – valves, controls
  - Rubber - foam/rubber seals
  - Metal Fabrication – Weldments, Stainless Steel
  - Plastics/Composites – Injection and Blow Mold
  - Machined parts – CNC metal machining capability
  - Tube Bending
  - Entertainment Systems – 10-15” Monitors, radio, CD/DVD/BlueRay, Microphones, Speakers & accessories
  - DC/AC Inverters – 1500-4000w

Contact Information

MOTOR COACH INDUSTRIES
SUPPLY CHAIN CONTACTS

- Powertrain, Electrical, HVAC, ADA

  Terry Loewen, Sourcing Manager

  terry.loewen@mcicoach.com

  PH(204) 287-4457

- Metal Fabrication, Composites, Seats, Glass & MRO

  Shannon Davidson, Sourcing Manager

  DBE Liaison Officer

  shannon.davidson@mcicoach.com

  PH(204) 287-4356

14

NEW FLYER

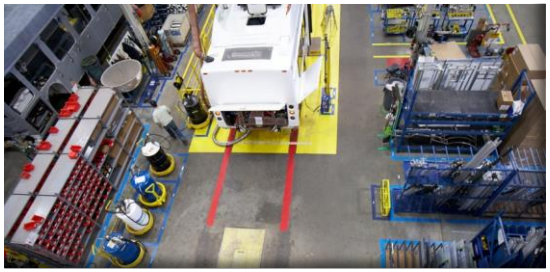
New Flyer Industries

A better product.
A better workplace.
A better world.

NEW FLYER

#1 Heavy-Duty Transit Bus manufacturer in North America

- Founded in 1930 – Public Co since 2005
- Largest installed base of transit buses in North America – 25,000
- Heavy-duty transit buses in 30',35',40' and 60' articulating length.
- A MiDi® shuttle/transit bus in 30' and 35' for private and public operators.
- Manufacture approx 2,500 Equivalent Units (EUs) per year. On average, customers are approx 80% in US, 20% in Canada.
- 4 Bus Manufacturing Facilities
- Industry-leading Service and Support network including: regional product support managers, 2 regional service centers and 5 regional Parts Distribution centers
- ISO 9001, 14001, and 18001 certified
- Our Mission : ***To Deliver the Best Bus Value and Support for Life***



Market Leader in Volume, Technology, Innovation and Support

Transit Bus Product Offering

NEW FLYER

MiDi®
30’, 35’

Xcelsior®
35’, 40’

Xcelsior®
60’

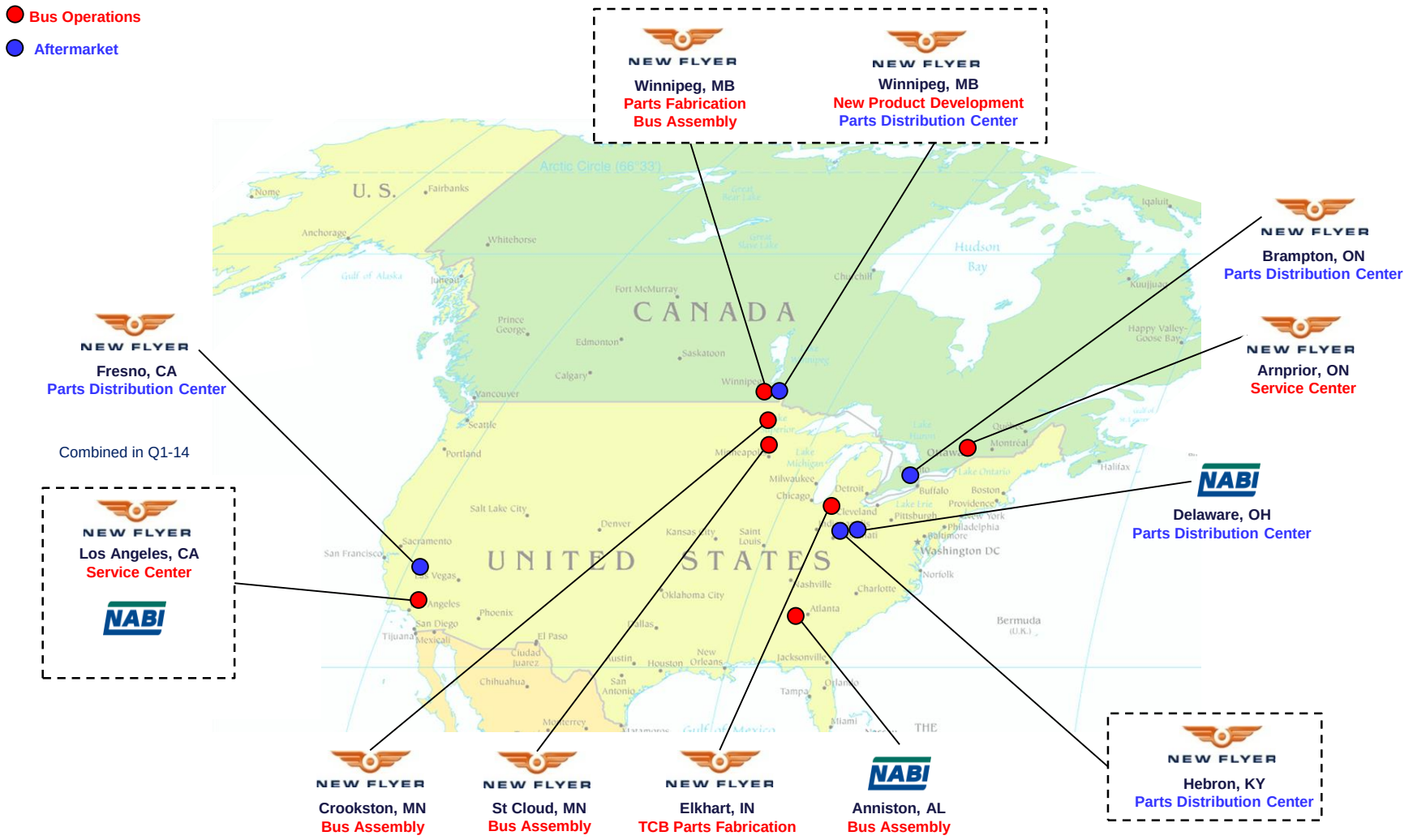
NABI

LFW
32’, 35’, 42’

BRT
42’

BRT
60’

Bus and Aftermarket Locations



Our Core Operating Principles…

Great Place to Work

- Employer of Choice
- Safe, Clean, Controlled Workplace
- Trained Employees
- Consistent/Strong Communications
- Team Work

Operational Excellence

- World Class Facilities
- Product Technology and Systems Integration Excellence
- First Time Quality (Products and Services)
- Learning Organization with Continuous Improvement Culture
- Efficient & Effective Use of Resources

Customer Experience

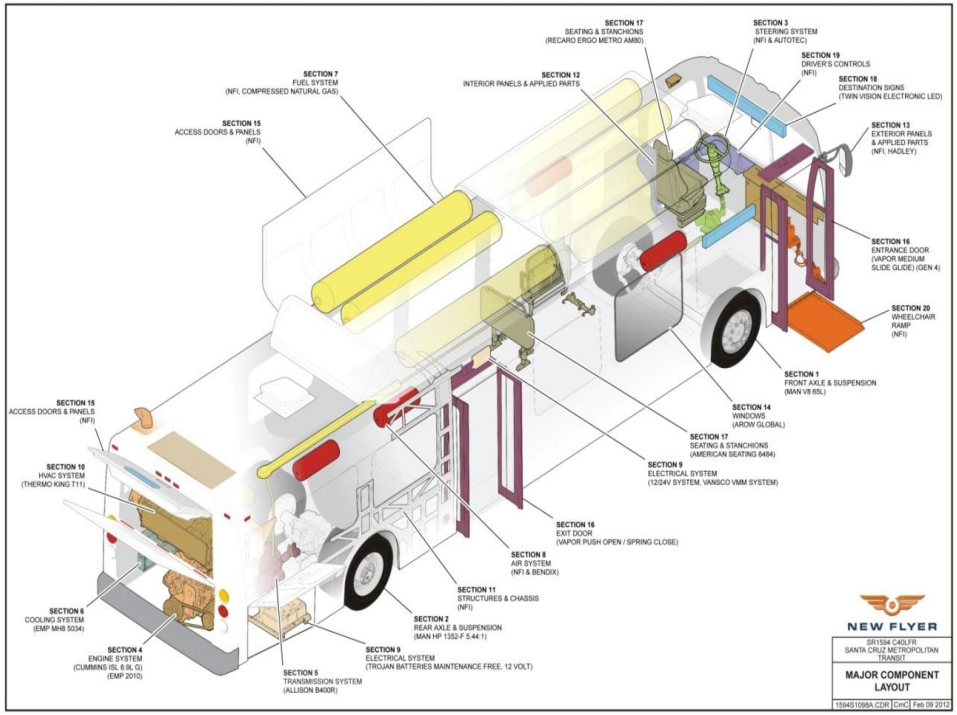
- Focus on Customer Satisfaction
- Become the Supplier of Choice
- Customer Service and Product Support Excellence throughout Life Cycle of Vehicles
- High Priority Customer Response

Supplier Partnerships

- Select best in class suppliers
- Be the Partner of Choice for Key Suppliers
- **Collaboration with Suppliers** to Optimize our Products and provide Best Value for our Customers
- Suppliers integrated into our Business (B2B, JIT, On-Site)

Supply Chain - a Key Value Driver

- > 5,000 components per bus
- 80% of product costs



- Most critical systems that drive customer value and satisfaction are purchased components

- *Supplier **delivery** needed for execution to schedule*
- *Supplier **quality** needed for customer satisfaction*
- *Supplier **support** needed for the life of the vehicle*

Seek to partner with best in class suppliers and drive continuous improvement

Supply Chain Contacts

Website : newflyer.com

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Director of Strategic Sourcing
DBE and MWBE Liaison Officer
(204) 224-6435
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David White
EVP Supply Management
(204) 224-6376
David_White@newflyer.com

NEW FLYER

NOVA BUS
Driven by your city

CORPORATE PRESENTATION 2014

Nova Bus | Driven by your city

Partnership & Sustainable Development

NOVA BUS
Driven by your city

Our mission and vision

Mission

We focus our expertise and passion on creating and building sustainable transportation solutions.

We deliver unmatched performance and an exceptional customer experience.

Vision

We want to become the leader in sustainable transportation solutions by

- Creating value for customers in selected segments
- Pioneering products and services for the public transportation industry
- Driving quality, safety and environmental care
- Working with energy, passion and respect for the individual.

NOVA BUS
Driven by your city

Our values are the cornerstones of our work

Customer culture

Quality

Respect for the individual & teamwork

Safety

Environmental care

NOVA BUS
Driven by your city

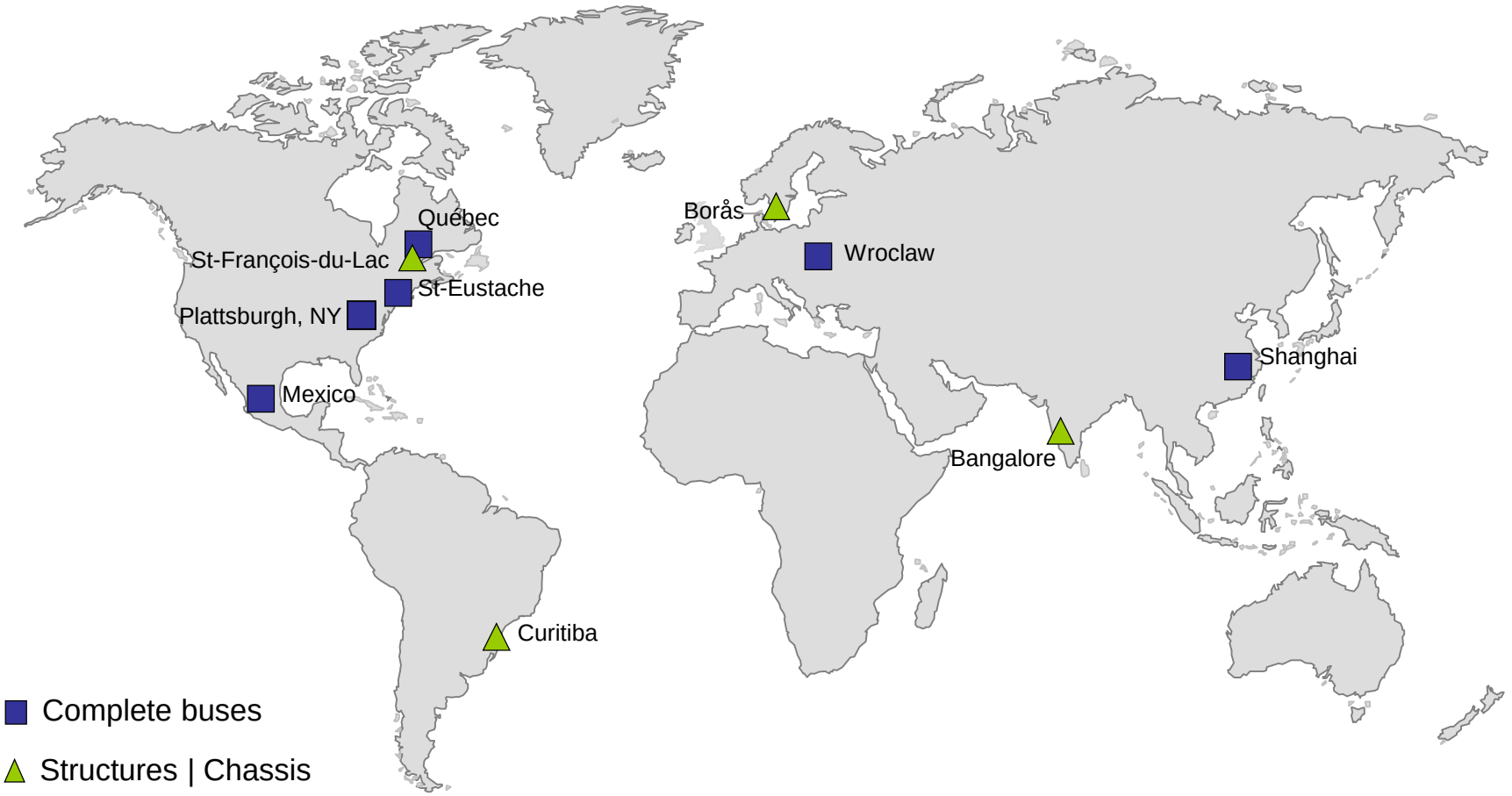
We are part of Volvo Group | A strong family

The Volvo Group is one of the world's leading manufacturers of trucks, buses, construction equipment, marine and industrial engines, with

- 115,000 employees
- Production facilities in 18 countries
- Products sold in 190 markets

As part of the Volvo Group, we have access to the group's financial strength, product capabilities, quality manufacturing technology and global Bus Rapid Transit (BRT) expertise.

Worldwide bus manufacturing facilities



Nova Bus operates 3 plants: two in Canada and one in the United States.

NOVA BUS
Driven by your city

Nova Bus | Strategic locations in North America

St-Eustache
Quebec, Canada

St-François-du-Lac
Quebec, Canada

Plattsburgh
New York, USA

Headquartered in St-Eustache

One structure manufacturing plant

- St-François-du-Lac (107,000 sq. ft.)

Two final assembly plants

- Canada: St-Eustache (150,000 sq. ft.)
- USA: Plattsburgh (140,000 sq. ft.)

Approx. 900 colleagues

NOVABUS
Driven by your city

We have been moving forward since 1979

1979 — Opening of the St-Eustache plant by GMC

1987 — Dial Corporation MCI

1994 — Nova Bus manufactures the RTS transit bus model

1996 — Introduction of the Nova LFS

1998 — Volvo Bus Corporation and Henlys Group acquire Nova Bus

2004 — Full acquisition of Nova Bus by Volvo Bus Corporation

2006 — Introduction of the Nova LFS HEV (diesel-electric hybrid)

LFS HEV

2007 — Introduction of the Nova LFS Artic

2008 — Introduction of the Nova LFX

2009 — Nova Bus opens its Plattsburgh, NY plant.

2010 — NOVA BUS Driven by your city

#1 brand in Canada

2011 — Unveiling of the Nova LFSe prototype (electric bus)

2013 — Introduction of the Nova LFS Natural Gas

2015-2017 — Launch and in-service testing of the electric bus *

* Image for illustration purposes only.

NOVA BUS
Driven by your city

Our Smart transportation solutions

Transit buses

Our entire line of buses is based on a single proven platform and designed to provide a highly competitive life cycle cost. Our solutions are among the best in the industry.

For you, this translates into cost savings, effective maintenance, streamlined training and simplified parts management.

Available with clean diesel, hybrid-electric or natural gas propulsion.

Parts & Service

Our dedicated support and strong parts network help ensure a successful introduction followed by years of reliable service. We are committed to keeping your vehicles on the road for their entire service life.

NOVA BUS
Driven by your city

We are driven by green efficiency

We are leaders in Electro Mobility.

Nova Bus is stepping forward in terms of the electrification of transit bus drivelines to do its part for future generations.

We have been successfully delivering hybrid buses since 2006. Our first fully-electric prototype was built in 2011.

Today, we continue the development of plug-in hybrid and 100% electric transit buses.

NOVA BUS
Driven by your city

Vision 2020 | We are growing stronger

Profitable Growth

Putting quality at the center of our organization
Greening our offer with leading products and services
Achieving a leading and powerful brand position
Ensuring global efficiency and financial health

Business Partner Culture

Focusing on our business partners
Revolutionizing service and support

Colleague Contribution

Strengthening culture, knowledge and practice
Being recognized as a preferred employer

NOVA BUS
Driven by your city


NOVA BUS
Driven by your city

PROTERRA

America's Electric Bus Company

APTA Buy America Transit Supply Chain Presentation

Dale Hill

Founder

dhill@Proterra.com

1 Whitlee Court

Greenville, SC 29607

720-635-6681

The Role of EV's in Public Transit

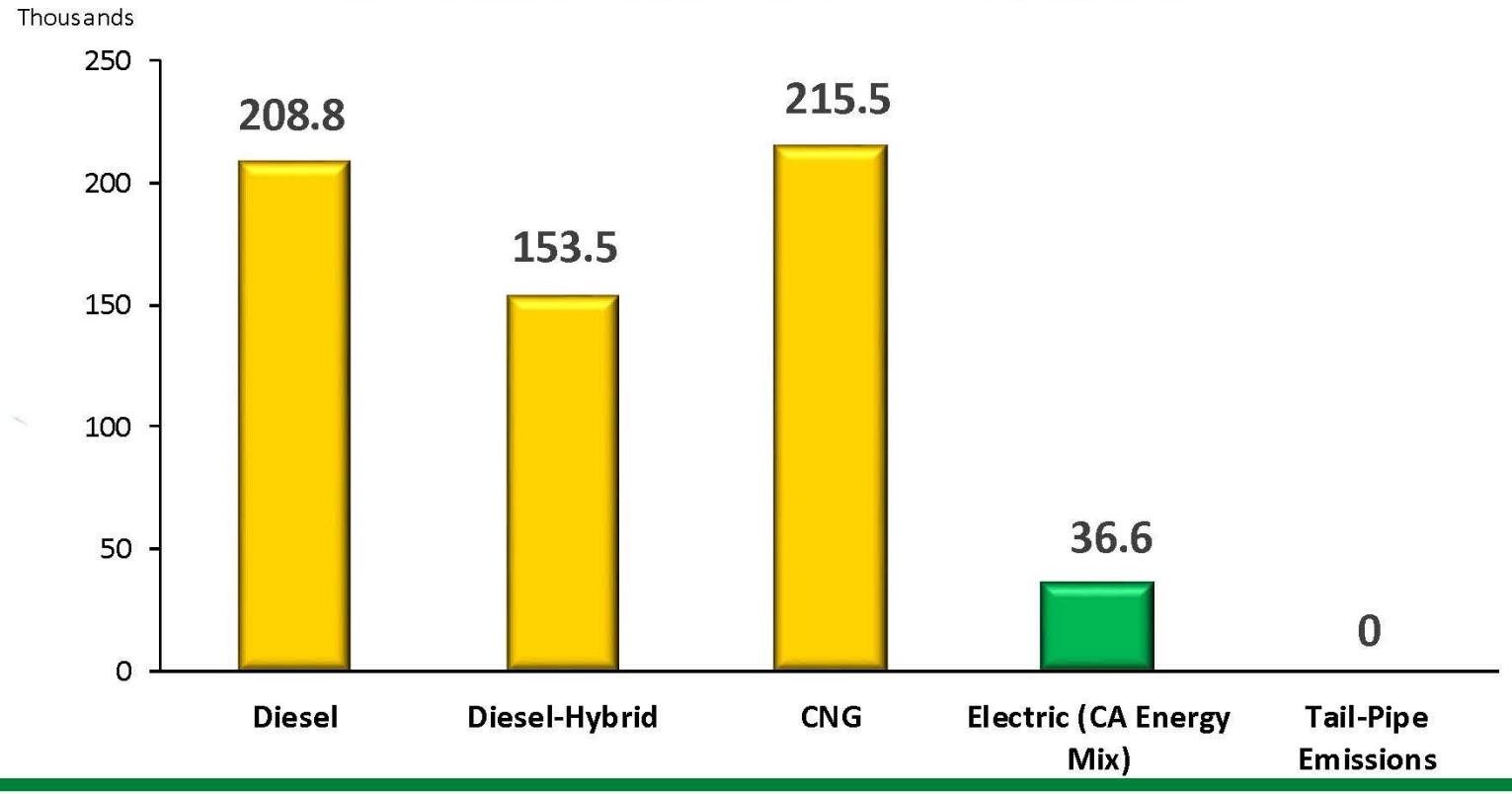
A Paradigm Shift in the Transit Industry

Paradigm Shift – *"A series of peaceful interludes punctuated by intellectually violent revolutions," and in those revolutions "one conceptual world view is replaced by another."*

Thomas Kuhn, *The Structure of Scientific Revolution*

Proterra Vision: Clean, Quiet Transportation for All

~180,000 lb Annual Savings in Greenhouse Gas Emissions



"The all-electric is clearly, we believe, where the industry is ultimately going to go."

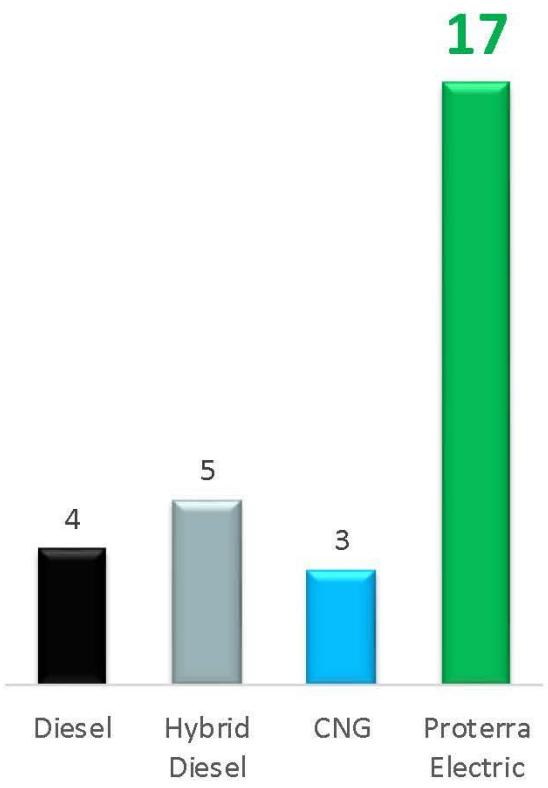
- Competitor bus company CEO

Economics

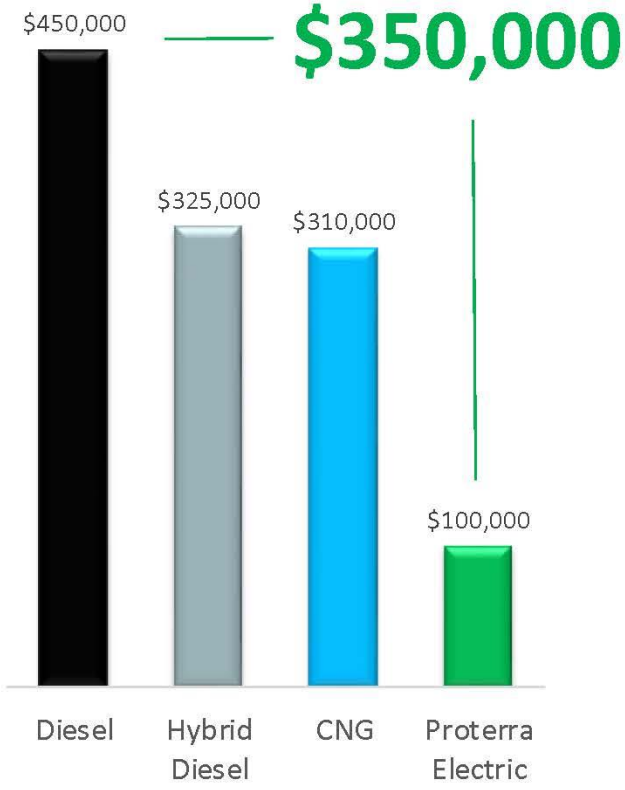
For a Green Technology to be Sustainable it must be Financially Attainable

Proterra Electric Transit Bus

Higher Fuel Economy (MPGe)

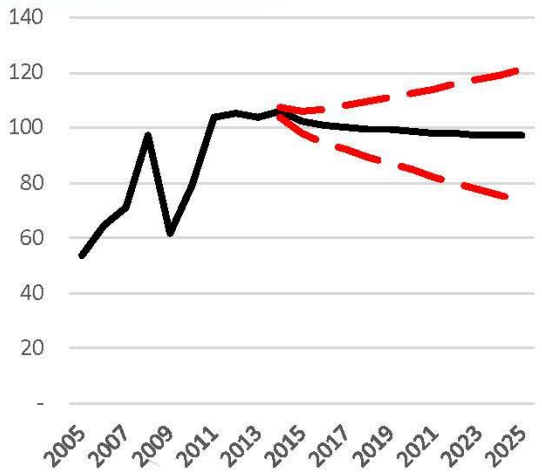


Lower Lifetime Fuel Costs



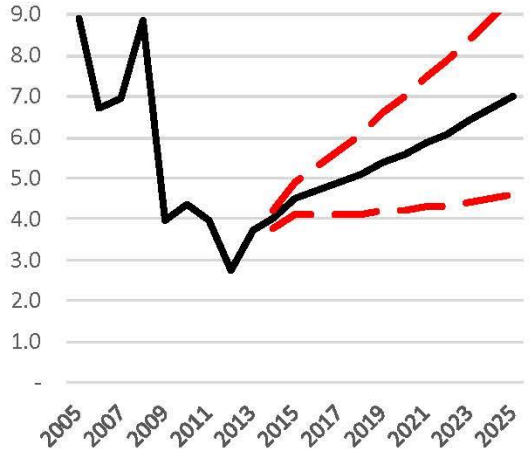
Fuel Price History & Forecast

Oil ($ per Barrel)



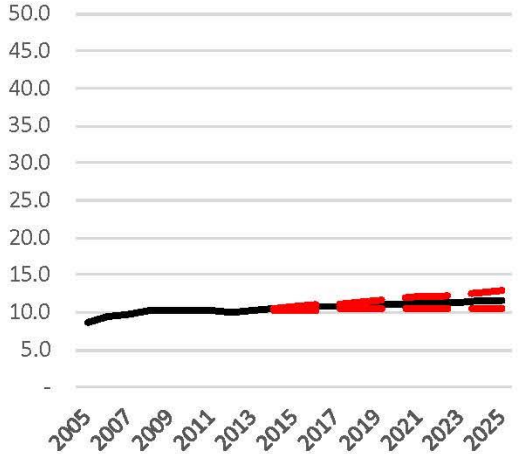
- Higher historical volatility
- Flat to declining base forecast
- Higher uncertainty for future prices

Natural Gas ($ per Million BTU)



- Higher historical volatility
- Increasing base forecast
- Higher uncertainty for future prices

Electricity (Retail Cents per Kilowatt Hour)



- Lower historical volatility
- Flat to increasing base forecast
- Lower uncertainty for future prices

Sources: World Bank Commodities Forecast (10/28/2013) & U.S. Energy Information Agency Short-Term Energy Outlook (1/7/2014)

Future electricity prices are more predictable

Product Advantages

	Proterra Electric	Typical Diesel	Typical Diesel Hybrid	Typical CNG
Bus Emissions (Annual Lbs. CO_2 - 000)	Zero	150	140	130
Total Emissions (Annual Lbs. CO_2 - 000)	40	210	170	215
Noise Level (dB)	< 60	2X as Loud	2X as Loud	2X as Loud
Fuel Economy (MPGe)	17	4	5	3
Fuel Price Volatility	Low	Higher	Higher	Higher
Construction	Corrosion-Resistant Composite	Metal	Metal	Metal
Weight (Tons)	13	14 - 15	15	15 - 16

Customer Business Case

Example

Assumptions	
Buses Per Charger	5
Federal Formula Funds	80%

	Diesel		Proterra		Proterra B/(W)	
	Each	Total	Each	Total	Each	Total
Bus	475,000	2,375,000	900,000	4,500,000	(425,000)	(2,125,000)
Charger incl. Install	-	-	160,000	800,000	(160,000)	(800,000)
Subtotal	475,000	2,375,000	1,060,000	5,300,000	(585,000)	(2,925,000)
Less: Federal Formula Funds	(380,000)	(1,900,000)	(848,000)	(4,240,000)	468,000	2,340,000
Initial Cost	95,000	475,000	212,000	1,060,000	(117,000)	(585,000)
Annual Fuel Cost	35,907	179,534	10,015	50,077	25,891	129,457
Annual Maintenance Cost	58,000	290,000	37,000	185,000	21,000	105,000
Total Annual Cost	93,907	469,534	47,015	235,077	46,891	234,457
Payback Period (Years)						2.5
12-Year Annual Cost	1,126,881	5,634,404	564,184	2,820,919	562,697	2,813,485
Initial Cost + 12-Year Annual Cost	1,221,881	6,109,404	776,184	3,880,919	445,697	2,228,485

36% lower cost of ownership

Purposely Designed For Transit

Design Concept

What Does a Bus Do?

- Repeats its Route every ±1 hour
- Returns to a Common Point
- Has a 5 minute Layover

SO

If we give you a bus in which we can restore 1 hour of energy automatically in 5 minutes during layover

THEN

That Bus will Run 24 hours/day without returning to the bus barn

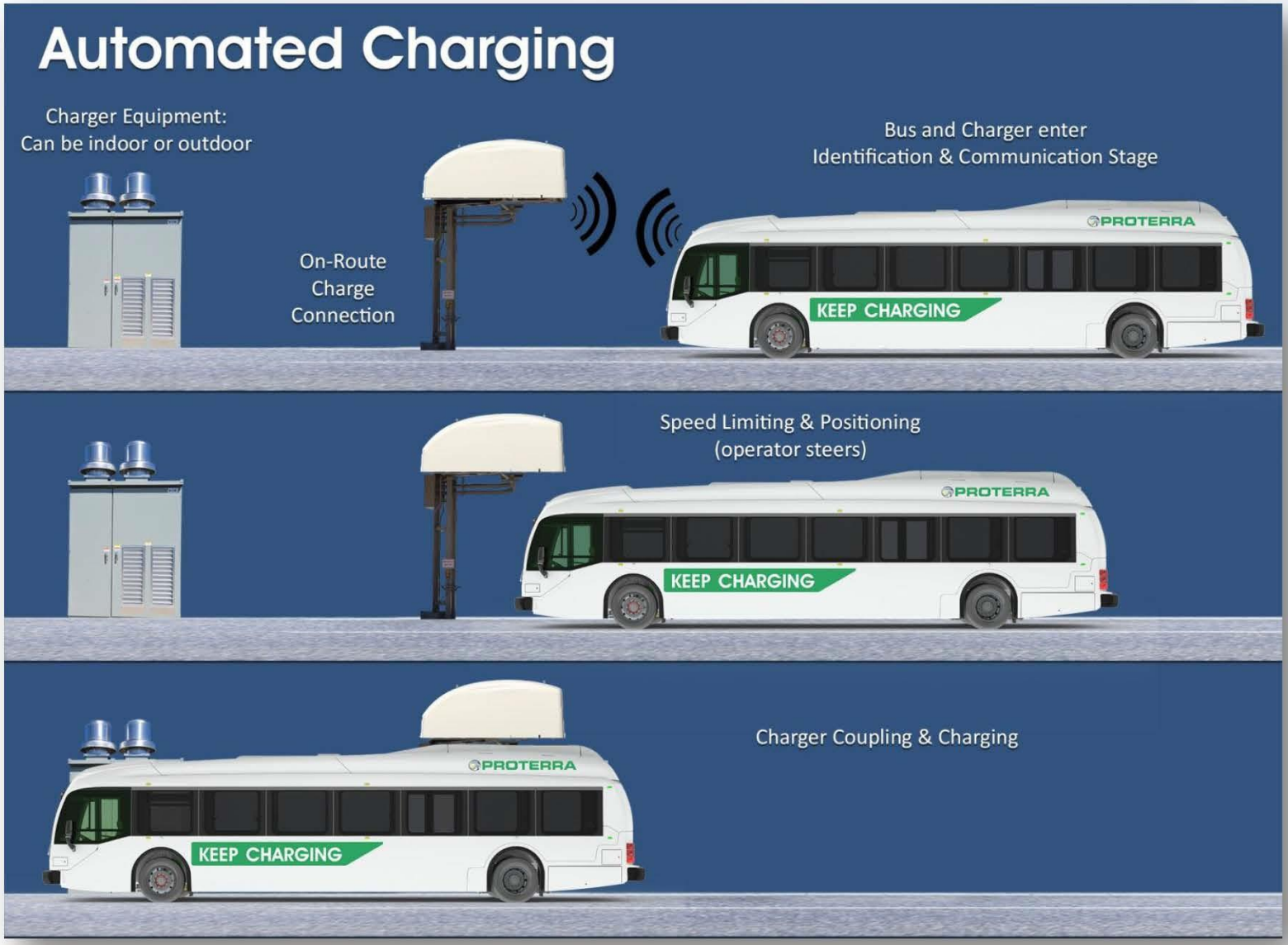
Eliminates all liquid fuel and tail pipe emissions

On-Route Charging

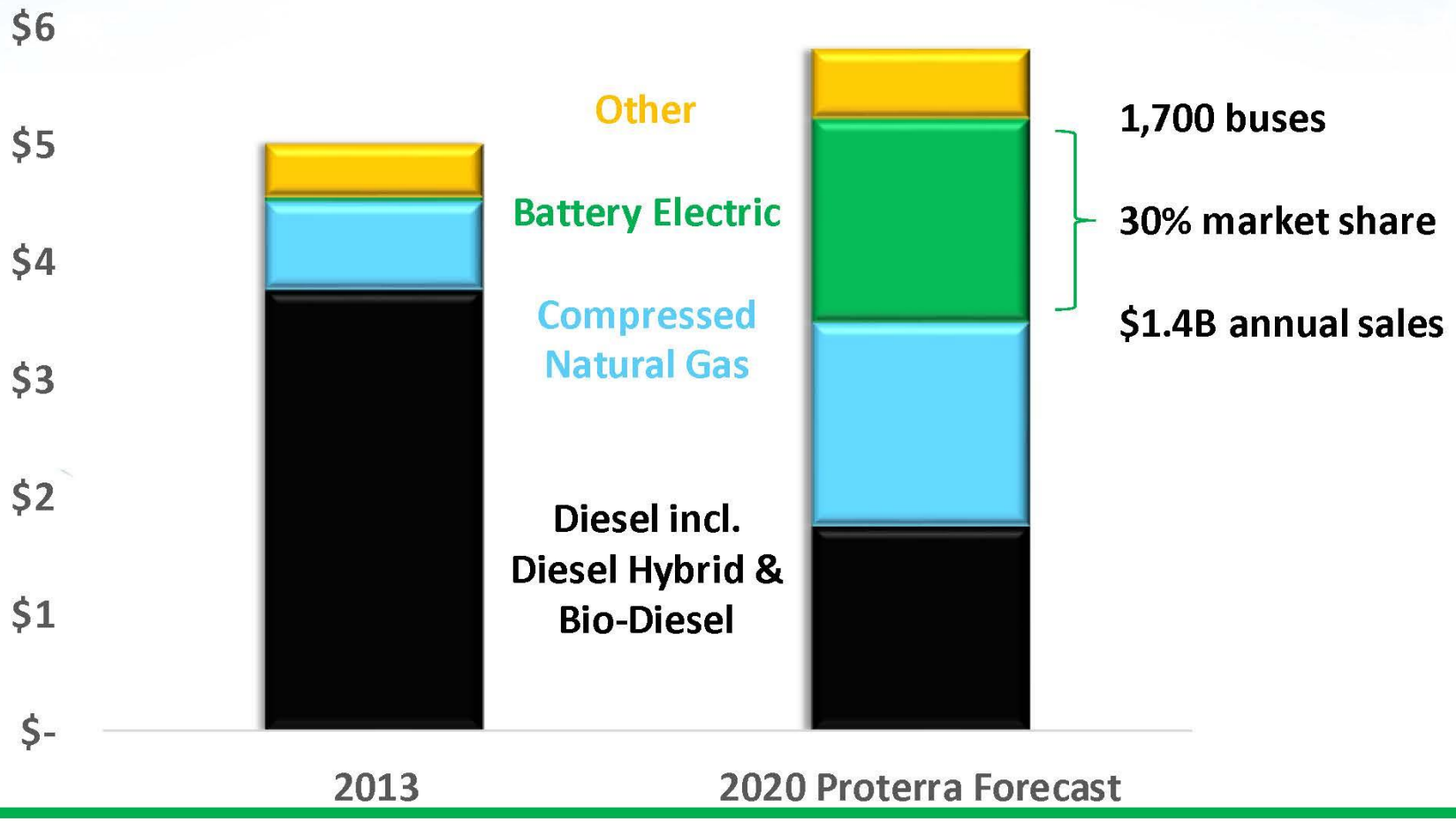
Charge Time

10 minute maximum

6 minute average



North America Transit Bus Sales (Bils.)



"...by 2020, we are going to see that a good portion of the transit fleet in the U.S. will be electric."

– Competitor bus company CEO

Proterra Product Comparison

	Version 1.5 – BE35	Version 2.0 – BE40
Length	35 feet (11 meter)	40 feet (12 meter)
Weight	14 tons	13 tons
Production Approach	Hand crafted	Mass production
Direct Labor Hours per Bus	> 3,000	< 1,000
Primary Battery Supplier	Altairnano	Toshiba
Electric Motor Supplier	UQM	UQM
Transmission Supplier	Eaton	Eaton
Status	Discontinue in 2014	Launch in 2014

The Proterra *'Solution'*

Customers


SAN JOAQUIN RTD
Electric Fleet:
2 buses
RTC
Electric Fleet:
4 buses
WRTA
Worcester Regional Transit Authority
Electric Fleet:
6 buses
Foothill Transit
Electric Fleet:
15 buses
PROTERRA
CITY OF SENECA SOUTH CAROLINA
Electric Fleet:
4 buses
Nashville MTA
Electric Fleet:
7 in production
Electric Fleet:
3 buses
Electric Fleet:
10 in production
I'M LEADING THE CHARGE.
#GreenLeader
starmetro
Electric Fleet:
5 buses
= repeat customer

Strategic Relationships

Selected Suppliers

TOSHIBA
Leading Innovation

Lithium Titanate Batteries

EATON

Transmissions & Charging Equipment

UQM TECHNOLOGIES

Electric Motors

tpi

Composites

Selected Investors

KPCB | KLEINER PERKINS CAUFIELD BYERS

MITSUI GLOBAL INVESTMENT

Financial

GM VENTURES

Transportation

Constellation
An Exelon Company

EDISON INTERNATIONAL®

Electric Utilities

Proterra Supply Chain Point of Contact

Angela Forrest

aforrest@Proterra.com

864-438-0000

The Tightrope That OEMs Walk with Buy America

$

Reliability

Thank you

vossloh KIEPE

Buy America Transit Supply Chain Connectivity Forum
Kansas City, MO

May 7, 2014

Noel D'Sa

vossloh KIEPE

Vossloh Kiepe Inc.
North American Headquarters
Alpharetta, Georgia

Contact Information;
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Vossloh Kiepe Inc.
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Alpharetta, GA 30005
Phone: (770) 557-6343
j.andreas@vku.vossloh.com

Contact Information;
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Supply Chain Manager
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Alpharetta, GA 30005
Phone: (770) 754-0918
N.Carmichael@vku.vossloh.com

Est. 1906, Vossloh Kiepe Specializes in the Design and Manufacture of;

- ❑ **Electric Traction Systems for Rail and Bus Applications**
- ❑ **Auxiliary Power Systems for Rail and Bus Applications**
- ❑ **Electrical System Upgrades for Obsolete Equipment**
- ❑ **Electrical Components, Such as Contactors, Relays, Switches, etc.**

Customized Test Equipment

Vossloh Kiepe Inc.
Alpharetta, Georgia


System Integrator

Vossloh Kiepe, Inc Products

Complete Electrical Systems Including Traction And Auxiliary Power Systems		
Product Applications		**Product Features**
Light Rail Vehicles/Streetcars		Voltages up to 1500V
Subway/Metro		Wide Range of Power Outputs
Commuter/Regional		IGBT Technology
Trolley Bus		AC And DC(Upgrade) Applications
Hybrid Bus		Integrated Energy Management
Battery Bus		Monitoring And Diagnostics
Fuel Cell Bus		Off Wire Applications

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Vehicle Integration
Dayton Dual-Mode
Trolley Bus

vossloh KIEPE

Vossloh Kiepe Inc. - U.S. References

Vossloh Kiepe, Inc. U.S. References:

PCC car AC drive and APS upgrade – SEPTA / Brookville Locomotive
Subway IGBT chopper traction power upgrade – SEPTA direct
Electrical systems for new trolley buses – SEPTA / New Flyer
Traction power system for new LRVs – Houston Metro / CAF
Vehicle system integrator for Dayton dual mode trolley buses
Electrical systems for new trolley buses – King County Metro / New Flyer
Electrical systems for new trolley buses – San Francisco MTA / New Flyer

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8:30am	Welcome Remarks and Forum Introduction *Clint O'Neal, Vice President, Business Recruitment Missouri Partnership, Missouri Department of Economic Development* *Dusty Cruise, Director Missouri Enterprise*
8:45am	U.S. DOT Keynote and Buy America Overview *Corey Walker, General Engineer, U..S. Federal Transit Administration*
9:30am	Q&A
9:40am	OEM Panel: Supply Chain Opportunities and Needs
10:40am	**Q&A**
10:55am	**BREAK**
11:10am	Supplier Panel: The View from Prospective Transit Suppliers
11:50am	Q&A
12:00pm	LUNCH
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1:30pm	Open Discussion: Transit Supply Issues and Opportunities
2:00pm	Intro to One-on-One Meetings* and Closing Remarks
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Buy America Transit Supply Chain Connectivity Forum

May 7, 2014

Kansas City Marriott Downtown & Convention Center

MissouriEnterprise™

Transformation. Innovation.
Next Generation Manufacturing.

Missouri Enterprise –Who we are

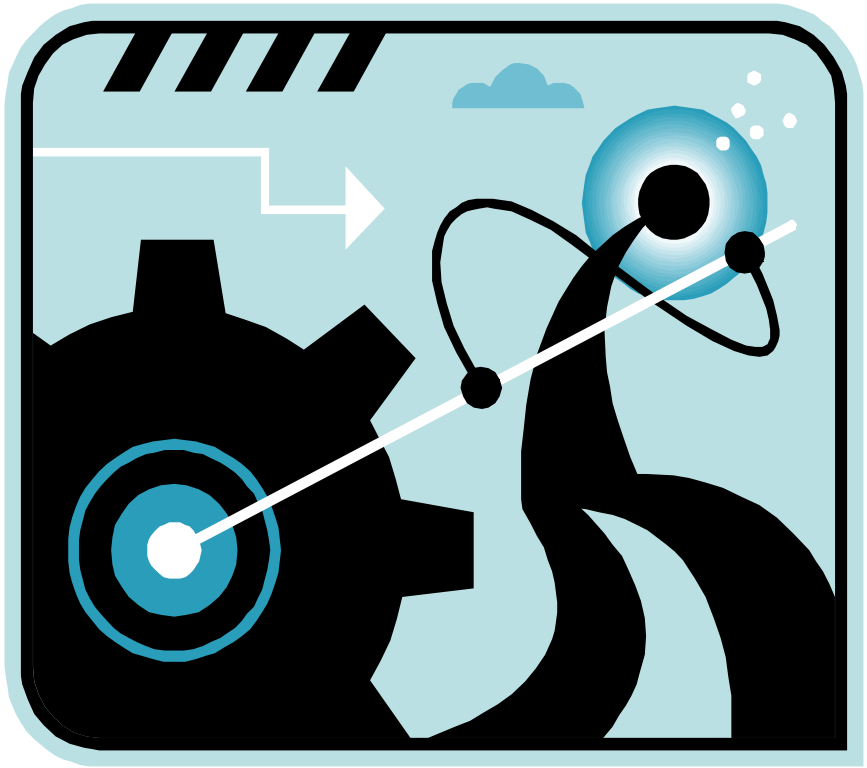
- A private nonprofit in business more than 30 years.
- Our Mission = **To Transform Missouri Manufacturers For Next Generation Success!**
- Our professional staff
  - Management and business strategy specialists
  - Product designers
  - Lean/Sigma Practitioners
  - Innovation Black Belts
  - Certified Energy Manager
  - Experienced manufacturing engineers
- Part of the national Manufacturing Extension Partnership (MEP) network.

What Is MEP?

Missouri Enterprise is your state MEP Partner

- The MEP is here to support American manufacturing:
  - Achieve profitable growth, sustainably
  - Save time and money through increased operational efficiency
  - Enhance product quality and production techniques
  - Access critical services, affordably
  - Create and retain jobs in Missouri
- We Exist to Help Manufacturers “Make it in Missouri”

What We Do



Hands-on consulting and implementation assistance in these broad areas:

- Innovative Growth and Business Strategies
- Continuous Improvement
- Supplier Development
- Sustainability
- Workforce Development

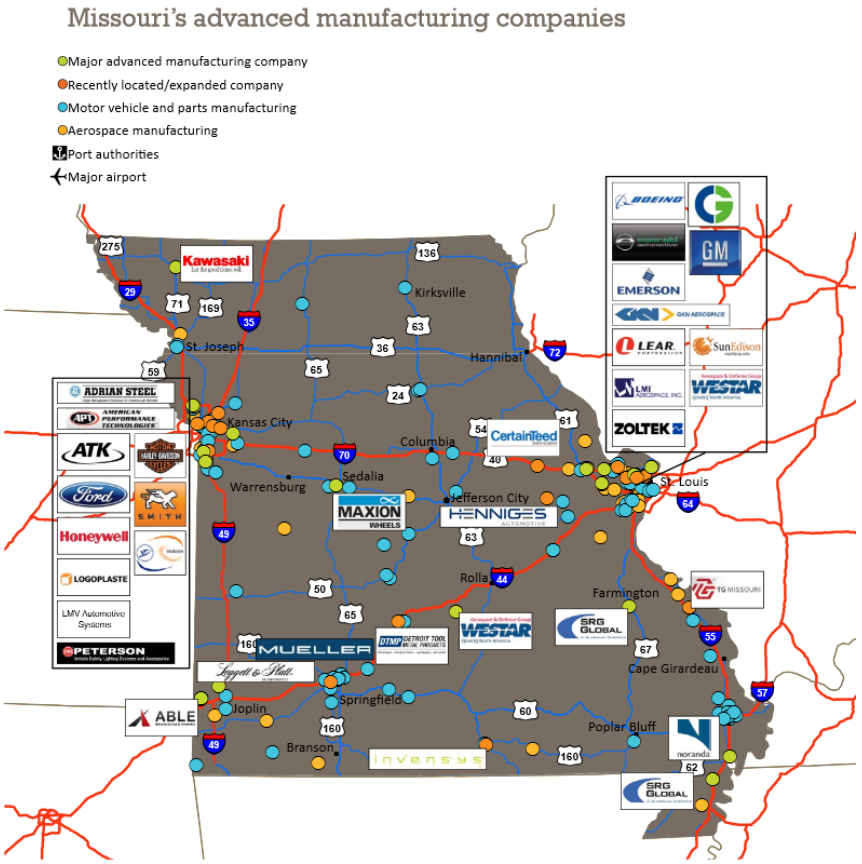
Missouri MEP Partners

National Institute of Standards and Technology — NIST National Institute of Standards and Technology	Federal Partner
MISSOURI Department of Economic Development	State Partner
MISSOURI TECHNOLOGY CORPORATION	State Partner
Manufacturing Clients, Universities, Community Colleges, Industry Associations, Local and Regional Economic Development Organizations, Environmental and Energy Organizations, Workforce Organizations, Private Consultants and more…	Local Partners

Manufacturing in Missouri

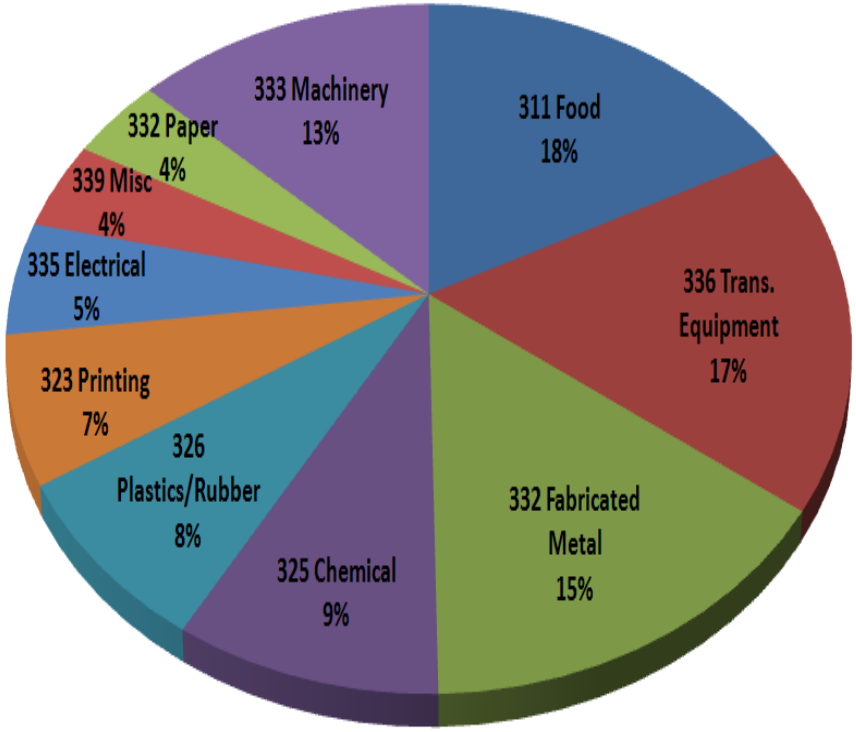
Missouri has a robust manufacturing sector with experienced resources to support the Transit Industry.

- Top Ranked Transportation Network
- Central location
- Low business and labor costs
- Ideal workforce



Manufacturing in Missouri

- Three of the top Five manufacturing products in Missouri are, Transportation Equipment, Machinery, and Electrical Equipment.
- Transportation equipment ranks second in the state for industrial employment, accounting for over 43,000 jobs.
- Of the 2.67 million workers in Missouri, 606,000, or 22.7% are employed in Advanced Manufacturing related occupations.



Manufacturing in Missouri

What is the largest barrier to supply to the Transit Industry?

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MEP Assistance Opportunities and Available Resources

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Samm Bowman
Business Specialist
NIST MEP
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301-975-5978

25 YEARS

MAKE IT IN AMERICA
MANUFACTURING EXTENSION PARTNERSHIP

The National Institute of Standards and Technology (NIST)

Mission: To promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life

NIST Programs

- Measurement Laboratories, **Manufacturing Extension Partnership (MEP) Program**, Baldrige Performance Excellence Program

NIST Assets, Products, Services

- 3000 employees, 2700 associates and facilities users, >1300 field staff in MEP partner organizations
- Unique User Facilities: Center for Neutron Research, Center for Nanoscale Science and Technology
- 100 different types of Standard Reference Data, 1,300 Standard Reference Materials
- 18,000 calibration tests, 2,000 publications, 800 accreditations per year

THE MEP PROGRAM IN SHORT….

Federal-state-private partnership that works with U.S. manufacturers to help them create & retain jobs, increase profits, and save time & money

- Nationwide network of manufacturing specialists assisting U.S. manufacturers to grow and compete
- Focus on developing new customers, expanding into new markets, creating new products.
  - ✓ 60 centers with 500+ field locations
  - ✓ 501 c3 non-profits, university-based, embedded in state government agencies
  - ✓ System wide, Non-Federal staff is > 1,200
  - ✓ Contract with over 2,800 third party service providers
- FY2014 Federal budget: $128M, w/cost share requirements for MEP Centers
  - ✓ MEP Center operational model includes fee-for-service approach

30,131
Manufacturers served in FY2013

MEP completed over 515,000 customer engagements since the program's inception including technical assistance projects, training programs, networking events and long-term strategic support.

MEP CLIENT IMPACTS

Results reported by MEP clients receiving services from FY2012-2013. Measures are a conservative snapshot of benefits. Recurring or cumulative benefits may be larger

New Sales	**$2.2 Billion**
Retained Sales	**$6.2 Billion**
Total Increased/ Retained Jobs	**62,703**
Cost Savings	**$1.2 Billion**
New Client Investments	**$2.6 Billion**

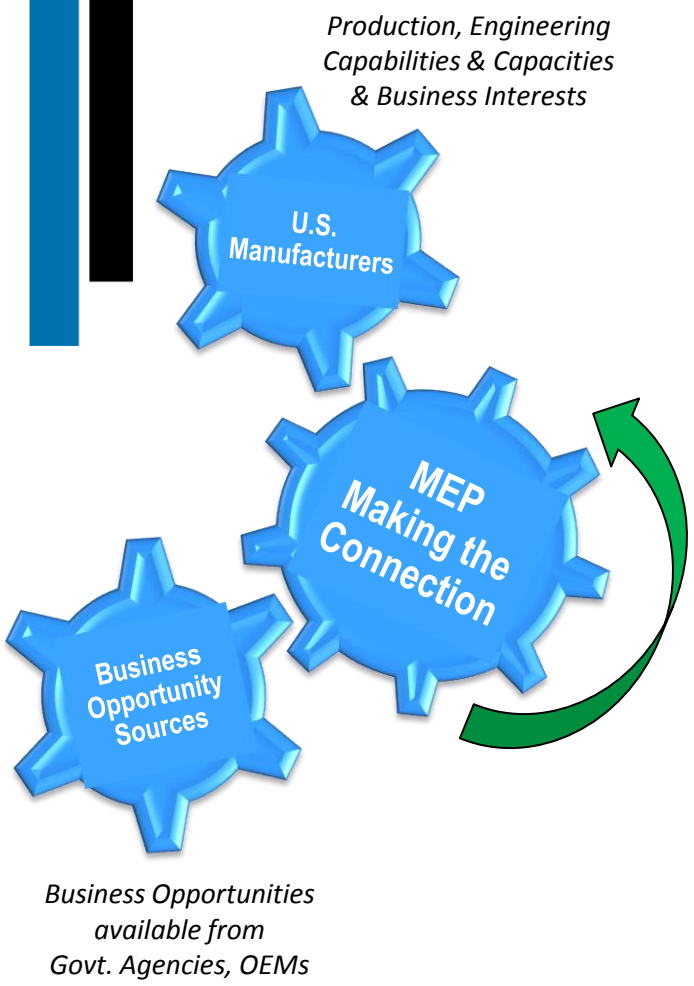
www.nist.gov/mep

– or –

800-MEP-4MFG

Making an Impact on U.S. Manufacturing

MEP: *Connecting and Assisting U.S. Manufacturers*

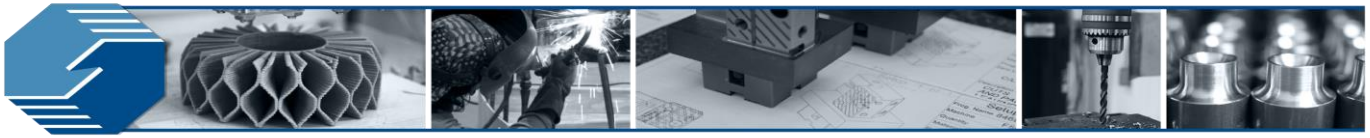


- Enhance business opportunities for U.S. manufacturers
- *Connect* products, capabilities, capacities of U.S. (small) manufacturers with:
  - ✓ *Appropriate market opportunities*
  - ✓ *Supply chain needs of OEMs, govt agencies*
- Provide *assistance* to manufacturers, including:
  - ✓ *Technical manufacturing services for products, processes*
    - *Manufacturing Strategy and Scale-up*
    - *Production Optimization, (Re)tooling (Lean/Quality)*
  - ✓ *Supply Chain Requirements and Market Diversification*
  - ✓ *Innovation and Product/Process Development*
  - ✓ *IP Management and Financing/Access to Capital*
  - ✓ *Workforce Development*
  - ✓ *Environmental Sustainability*

MEP Supply Chain Assistance

- MEP has extensive, decades-long experience providing direct, hands-on assistance addressing complex technical and business issues associated with manufacturing supply chains.

- MEP supply chain support:
  - ✓ targets supply chains as a whole
  - ✓ applies to individual manufacturer assistance to OEMs and lower tier suppliers.
  - ✓ *capitalizes on MEP's ability to provide localized assistance on a national scale to maximize the overall impact at both micro (individual supplier) and macro (overall supply chain) levels.*



MEP Supply Chain Assistance

Supply Chain Optimization

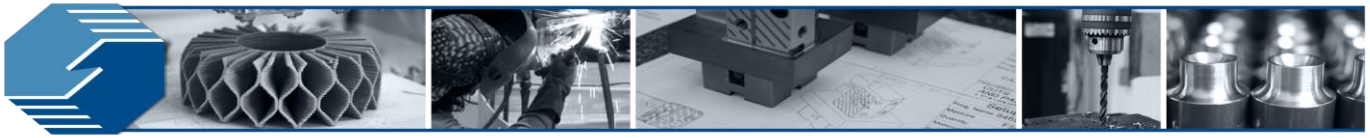
- Takes systems perspective, helps manufacturers build dynamic supply chains through the use of strategy, risk management, total cost of ownership, supplier communication, and supplier assessments.

Supplier Improvement

- Works with individual suppliers within specific OEM supply chains to implement process improvement and quality enhancement initiatives at all tiers.

Supply Chain Sustainability

- Includes multi-agency initiatives such as the Green Suppliers network, E3 (Economy, Energy, and Environment), and Energy Efficient Buildings Hub – to help reduce supplier impacts on the environment, provide manufacturers with sustainability assessments of production processes, and assist with the implementation of energy-saving projects.



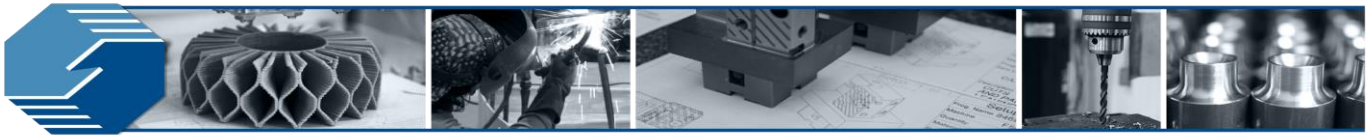
MEP Supply Chain Assistance

Supply Chain Technology Acceleration

- Includes Manufacturing Technology Acceleration Center (M-TAC) Pilot Projects & other assistance that help small U.S. manufacturers grow and compete within supply chains by focusing on the technological needs and trends of specific supply chains – and providing small manufacturers technology acceleration, transition and commercialization tools and services.

Supplier Scouting

- Leverages MEP's unique, nationwide knowledge of local manufacturing capabilities and capacities to connect U.S. manufacturers with business opportunities tied to specific supply chain needs from OEMs and government agencies & also includes supply chain re-shoring efforts



MEP Make it in America: Supplier Scouting

- MEP Supplier Scouting is a proven set of processes that brings business opportunities to U.S. manufacturers.
  - ✓ MEP leverages its knowledge of local manufacturers to
    - ID potential suppliers for gov agency, OEM sourcing needs
    - provide tech assistance to firms as relevant to specific supply chains – often involves market diversification for manufacturers
  - ✓ **MEP Supplier Scouting** includes assisting federal agencies' compliance with ***Buy America Provisions*** of federal funding programs.
  - ✓ MEP scouts for U.S. manufacturers that are capable ***and*** interested in supplying products needed by various supply chains
  - ✓ Multi-faceted approach to connecting manufacturers with opportunities
  - ✓ Key to success is the MEP Network – not the tools utilized

- MEP Supplier Scouting partners have included:
  - ✓ **DOT (FTA, FRA, FHWA, MARAD), DOD, DOE, DOC/NIST,**
  - ✓ **OEMs (rail, other industries)**

MEP Supplier Scouting and Buy America Transit Supply Chain Connectivity and Development

The nationwide MEP Network will actively assist in the development of more robust domestic supply base for transit equipment in the U.S. beginning in 2014.

- ✓ Interagency Agreement between DOT FTA and NIST MEP
- ✓ NIST MEP coordinate national, system-wide MEP efforts
- ✓ MEP Supplier Scouting conducted by Centers to ID manufacturers both capable of and interested in supplying needed manufactured goods
  - To likely include manufacturers currently serving transit industries + manufacturers from other sectors (auto, defense, aero, industrial controls / electronics, others ?)
- ✓ MEP available to assist domestic manufacturers with needs and requirements to enter transit supply chains and become suppliers

Buy America Transit Supply Chain Connectivity

Next Steps

- **Today's Supply Chain Connectivity Forum**
  - ✓ NIST MEP to post slides for access by participants, interested entities at www.nist.gov/mep
- **Next Connectivity Event**
  - ✓ Houston, TX – October 15, 2014, APTA Annual Meeting and EXPO
    - Details to be disseminated by NIST MEP, APTA, FTA, and MEP Centers
- **MEP Assistance to Manufacturers**
  - ✓ NIST MEP available to coordinate national level MEP assistance resulting from today's Forum, such as supplier scouting, supplier development and improvement, other, …
  - ✓ Local MEP Centers available to work with manufacturers at the local level to provide assistance in response to needs – resulting from today's Forum and other needs

Agenda

8:00am	**Registration/continental Breakfast**
8:30am	Welcome Remarks and Forum Introduction *Clint O'Neal, Vice President, Business Recruitment Missouri Partnership, Missouri Department of Economic Development* *Dusty Cruise, Director Missouri Enterprise*
8:45am	U.S. DOT Keynote and Buy America Overview *Corey Walker, General Engineer, U.S. Federal Transit Administration*
9:30am	Q&A
9:40am	OEM Panel: Supply Chain Opportunities and Needs
10:40am	Q&A
10:55am	BREAK
11:10am	Supplier Panel: The View from Prospective Transit Suppliers
11:50am	Q&A
12:00p	LUNCH
1:00pm	MEP Assistance Opportunities and Available Resources *David Stieren, Technical Manager, Program Development Office, NIST MEP*
1:30pm	**Open Discussion: Transit Supply Issues and Opportunities**
2:00pm	Intro to One-on-One Meetings* and Closing Remarks
2:15pm	One-on-One Meetings among OEMs and Suppliers
2:15pm	Networking Reception Concurrent with One-on-One Meetings
5:00pm	CONCLUDE

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