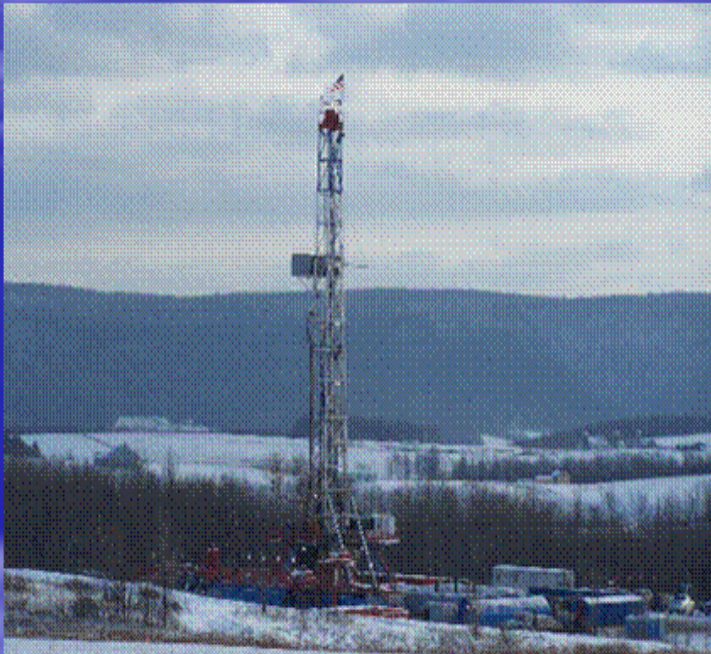


TRANSPORTATION PATTERNS AND IMPACTS FROM MARCELLUS DEVELOPMENT



Presented by:
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Lycoming County Transportation Planner
MAY 24, 2012

THE DISCOVERY

- Lycoming County officials first became aware of Marcellus potential in Spring 2008.
- Sudden influx of customers appearing at our Register and Records Office recording deeds.
- Started making inquiries about what was going on.

LACK OF PLANNING

- The Lycoming County Comprehensive Plan and MPO Long Range Transportation Plan was updated in 2007.
- No mention of Marcellus so impacts not taken into account.
- Now updating these plans to address impacts through County Transportation Plan, Energy Plan, Marcellus Impact Plan development.

Created Task Force

- Lycoming County was first county in PA to form a Natural Gas Exploration Task Force in Spring 2008.
- Task Force mission is to identify key issues, research facts and information, and review proposed public policy regarding positive economic impact of gas exploration in county.
- Task Force is NOT a regulatory body.
- 15 Members on Task Force representing state, county and local government, Chamber, emergency services, banking, real estate and health system.
- Six subcommittees: Economic Development, Education, Environment, Planning and Zoning, Public Policy, Public Safety.
- Traveled to Texas in 2008 to learn about Barnett Shale Experiences.
- Visit www.lyco.org for Task Force Information

Local Road Impacts



- About 2/3 of road system in Lycoming County is locally owned
- Many of these roads not built to accommodate heavy hauling activity.
- PA Motor Vehicle Code sets forth process to legally impose road weight limits and bonding requirements.
- Our County partners with PennDOT on LTAP Program and provides training to municipal officials on proper posting and bonding procedures.
- Most of our municipalities impacted by Marcellus have adopted posting and bonding programs, however some have chosen more informal legal agreements with gas companies to recover costs for damage to local roads.
- For the most part, gas companies are doing a good job making necessary repairs to local roads.
- Future road maintenance may be a concern.
- Accelerated deterioration to life cycle pavements on non-bonded roads and who bears these costs.
- No comprehensive database exists regarding condition of local roads.

ROAD DAMAGE

Tioga County, S.R. 3001



March 2010 condition

Bradford County, S.R. 3018
(Towanda)



March 2010 condition

OTHER IMPACTS

- Municipalities challenged to manage the same issues with less resources and expertise
- How to factor gas drilling in with long-term transportation plans?
 - Dynamics of operation
 - Changes in method of hauling water
 - Gathering lines and major pipelines
 - Right-of-way widths and multiple uses
- Frack operations will continue long after drilling
- Shales below Marcellus show promising opportunities

Gas Line Installation



TRAFFIC CHANGES

- Increases in traffic volumes and percent of truck traffic on primary networks
- Secondary, low volume system has seen traffic increase from 150 vehicles a day to an additional 700 trucks per day



Photo: Universal Well Services

IMPACT TO LOCAL BRIDGES



- Lycoming County has about 100 locally owned bridges greater than 20 feet span length.
- Approximately 25% of these bridges are structurally deficient.
- The Feds require routine bridge inspections for structures over 20 feet long.
- Lycoming County has another 100 locally owned bridges between 8-20 feet long.
- Approximately 45% of these smaller bridges are structurally deficient.
- The Feds do NOT require these smaller bridges to be inspected.
- Lycoming County did its own pilot program and inventoried and inspected these smaller bridges especially due to Marcellus heavy hauling over these bridges so proper weight limit postings can be determined.
- PennDOT has launched a state-wide planning initiative to inventory the 8-20 foot locally owned bridges, but no funds to conduct inspections.
- Gas companies in our area have used “Jumper Bridges”



RVT CNG Project

The RVT CNG Project involves the creation of a multi-municipal Fast-Fill CNG Fueling station that will be open to the public at River Valley Transit's (RVT) 1500 West Third Street location in Williamsport, Pennsylvania.

COMPRESSED NATURAL GAS (CNG):

- > Clean
- > Affordable
- > Abundant
- > American



RIVER VALLEY TRANSIT (RVT) COMPRESSED NATURAL GAS (CNG) PROJECT



River Valley Transit (RVT) operates a 30 bus transit fleet and has plans to transition it to Compressed Natural Gas (CNG). River Valley Transit has completed a CNG Fueling Feasibility Study in order to understand the investment and payback of fueling its bus fleet and county, city, and municipal vehicles with CNG.

The RVT CNG Project involves the creation of a multi-municipal Fast-Fill CNG fueling station that will be open to the public at River Valley Transit's West Third Street location in Williamsport, PA.

River Valley Transit has applied for an Alternative Fuels Incentive Grant (AFIG) from the PA Department of Environmental Protection's Office of Energy and Technology Deployment to assist in covering some of the project costs.

Historically, River Valley Transit has fueled its bus fleet with diesel. As a public entity, they have had the most diesel volume usage in Lycoming County, leading them to become the fuel purchaser and distribution point for Lycoming County surrounding

municipal-owned vehicles, including the City of Williamsport. In addition to diesel, they supply gasoline for their smaller vehicles and other entities.

Adding CNG to the facility's fuel offerings is a great opportunity for Williamsport and central Pennsylvania to benefit from its natural gas resources in Pennsylvania and will produce economic development in the region and provide long-term benefits to the community.



Learn more about how compressed natural gas can benefit you, your company, your environment and your economy at:

www.CNGFOCUSGROUP.com



In addition to its 30 bus fleet, RVT fuels vehicles for the City of Williamsport, County of Lycoming, as well as other neighboring municipalities, and non-profit organizations with diesel and gasoline.

RVT is the largest distributor of diesel fuel in the Lycoming County.





RVT CNG Project

A staged scalable approach

Stage 1 – create a Modest Sized Fast-Fill CNG
Install a CNG dispenser at the existing RVT fuel island.

\$400,000 Alternative Fuel Incentive Grant (AFIG) funds are the impetus for this.
\$3.5M Clean Fuels Grant for purchasing buses and begin construction

The Project is currently in the design & planning stage.



CNG

NO SMOKING

NO IDLING
EXCESS POWERED
VEHICLES OVER
15 TONS
ALL DAY LONG

24

24

PAYBACK - PROJECTED FUEL SAVINGS OVER 5 YEARS. = \$1,297,860**

With its transit fleet alone, RVT burns 221,315 gallons of diesel fuel each year.

Estimated annual diesel fuel cost is **\$862,907**.

In the first year, 2013

20% of the diesel fuel will be displaced by CNG

45,000 diesel gallons x \$3.899* = \$ 175,455

45,000 DGE x \$1.77** CNG cost = \$ 79,650

In 2012/2013 **\$ 95,805 of savings with CNG**

With the replacement of 15 buses over **5 years**,

77% of diesel fuel will be displaced by CNG in RVT's fleet.

171,000 diesel gallons x \$3.899 = \$ 666,729

171,000 DGE x \$1.77** CNG Cost = \$302,670

In 2018, \$364,059 projected annual savings with CNG

THIS SAVINGS & LOCAL ENERGY RESOURCE CAN BE SHARED WITH RVT FUELING PARTNERS.

Municipal | Government | Non-Profits | Private Enterprise

* U.S. Energy Information Administration <http://www.eia.gov/oog/info/qdu/gasdiesel.asp> 7/12/2011

** LDC Fuel Utility Study Projections

Williamsport Regional Airport Impacts



Williamsport Regional Airport

- US Airways provides direct commercial air service to Philadelphia International Airport with 3 daily flights using 37 seat Dash 8-Turboprop aircraft.
- Approximately 40% of commercial passenger traffic is Marcellus related air travel. We report an 85% load factor meaning typically full planes
- Approximately 50% of corporate aviation traffic is Marcellus related travel.
- Since Marcellus activity began enplanements have increased 19%. (19,733 total enplanements in 2009 to 24,401 enplanements in 2011.)

WILLIAMSPORT REGIONAL AIRPORT

- Airport Authority is currently negotiating with additional air carriers to secure supplemental direct air service connections to Orlando, Washington DC, Chicago and Pittsburgh.

WILLIAMSPORT REGIONAL AIRPORT

- Airport Budget Has Gone from the Red to the Black by securing leases with gas companies to occupy airport property.
- Gas Industry Tenants Now Include:
 - Anadarko (7 employees)
 - Sooner Pipe (19 employees)
 - MB Machining (52 employees)
 - Infrastructure Pipeline Services (30 emp.)
 - Exco Corporation (28 employees)

These tenants have invested over \$ 2.5 million to improve airport property for their facilities

LYCOMING VALLEY RAILROAD IMPACTS



LYCOMING VALLEY RAILROAD IMPACTS

LVRR GAS WELL IMPACT



LYCOMING VALLEY RAILROAD IMPACTS

- In the past 3 years there has been a significant increase in carloads attributable to Marcellus Shale:

2009 = 1,230 total carloads

2010 = 5,789 total carloads

2011 = 6,880 total carloads

20% of total LVRR traffic is Marcellus related.

Each railcar load removes 4 trucks from road BUT rail cannot substitute for trucks as well sites are not rail served so an intermodal transfer from rail to truck must occur. Newberry Rail Yard is a major transfer center.

LYCOMING VALLEY RAILROAD IMPACTS

- The LVRR handles a variety of Marcellus related commodities:

<u>Commodity</u>	<u>Origin</u>
*Frac Sand	Ind, ILL, Mich, Wis, NJ
Steel Pipe	AR, AL
Plastic Pipe	Tx
Hydrochloric Acid	KY
Petroleum Oil	LA
Ground Barites	Tx, NV
Barium Sulfate	LA
Cement	Tx, Lehigh Valley
Ceramic Proppant	GA
Equipment (Primarily cranes)	CO, Saskatchewan

* Not unusual to have a frac sand inventory at Newberry Rail Yard of over 500 carloads at any one time.

LYCOMING VALLEY RAILROAD IMPACTS

- Limited amount of rail served industrial sites in Lycoming County.
- SEDA-COG Joint Rail Authority received a \$ 10 million federal TIGER 2 Grant to improve rail infrastructure in 5 counties of service area to meet Marcellus rail demand and other industry needs.

UNFUNDED NEEDS

- More frequent traffic counts for the state and local system to better assess growth
- Assessment of stress on state and local transportation system with increase in traffic
- Assessment of roadway network needs to support rail expansion
- Consistent inventory of locally owned transportation system
 - Bridges <20' to 8' (which have restrictions)
 - Posted Roads
- Condition assessment of locally owned <20' span bridges
- Administration costs to manage program
- ACT 13 Impact Fee Revenues Can Help

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JUST THE TIP OF THE ICEBERG??

