



**Battlement Mesa Natural Gas Development Plan
Meeting #5
Traffic Management Plan
September 2, 2009**

Traffic Management Plan - Overview

Meeting Purpose:

- Update public attendees on the public meetings held to date
- Mention future meeting dates and topics
- Present preliminary Traffic Management Plan to BMSA Oil & Gas Committee
 - Plan is preliminary in that not all details of routes are finalized
 - Process began with presentation and discussion of Antero's project with Garfield County Road and Bridge
 - Established current layout of preferred heavy haul truck routes in Battlement Mesa area
 - After conducting a recommended traffic study of key routes, additional planning with Garfield County will establish **final intended routes** to service each Antero well pad site
 - Traffic Management Plan will be a key part of Garfield County permitting process and COGCC Comprehensive Development Plan

Public and Agency Meetings To Date - Overview

- **May 27th** – Public Information Session (gym)
- **June 8th** – Discussed Plans with COGCC Director Neslin
- **June 10th** – CMD and Parachute Water District
- **June 11th** – GarCo Planning and Zoning – Pre Application Meeting
- **June 15th** – CDP Initiation Meeting with COGCC
- **June 16th** – BMSA Board Meeting – Establish Communication Process
- **June 23rd** – GVCA meeting
- **June 25th** – GarCo Planning and Zoning – CDP/Major Land Use Process
- **July 1st** – BMSAOGC Mtg #1 – Defined Topics of Discussion
- **July 8th** – COGCC Public Meeting on CDP Process
- **July 13th** – Antero/COGCC/Reps from Battlement Community conduct pad visit field trip and discuss setbacks to homes – wellheads to homes - all 500(+)ft
- **July 29th** - BMSAOGC Mtg #2 – Pad Locations, Facilities, and Setbacks
- **August 5th** - BMSAOGC Mtg #3 – Surface Use Agreement
- **August 19th** - BMSAOGC Mtg #4 – Drilling Schedule and Pace
- **September 2nd** - BMSAOGC Mtg #5 – Traffic Plan - **TODAY**

(15 public and agency meetings in 3 months)

Future Meetings - Overview

- **September 16th, 6:30pm** – Drilling, Completion and Water Management Plan
 - **October 7th, 6:30pm** – Environmental Program – Air Quality and Water Resource Protection and Noise, Dust, Weed, Light and Landscaping Mitigation
 - **October 21st, 6:30pm** – Emergency Response Plan and Pad Security Plan
 - **November 4th, 1:30pm** – Post Drilling and Completion Operations and Interim Reclamation
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- All meetings times were published in the last edition of the *Grand Valley Echo* and the dates and topics and meeting summaries are available on the battlementmesacolorado.com website

Traffic Management Plan

Consultation and Agency and Public Engagement

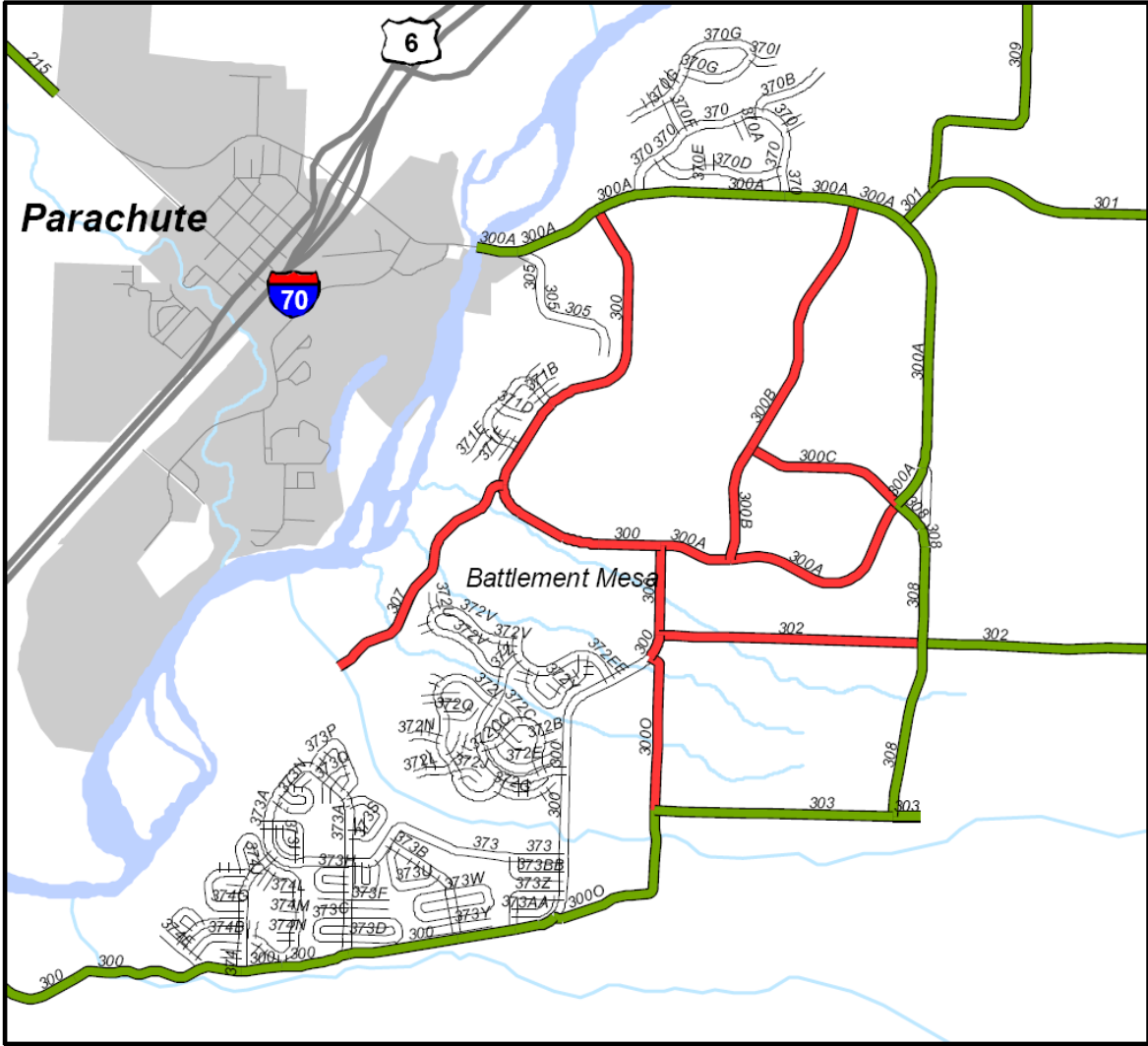


- Public Informational Session (May 27th)
- Antero adopted existing operating philosophy from RSNC Community Development Plan
- Engages Garfield County Representatives
- Engages Battlement Mesa Oil & Gas Committee
- Recognition of Parachute/Battlement Mesa interchange
- Antero will continue to seek contractor input

Traffic Management Plan

Battlement Mesa Area Map

www.garfield-county.com



Legend

- Preferred Haul Route
- Trucks Prohibited
- Other County Road **NOT A DESIGNATED HAUL ROUTE**
- State or Federal Highway

Traffic Management Plan

Pad Locations – Access and Egress



- **Access to pads using minimal impact approach**

Impacts

- Distance covered by heavy vehicles per route
- Utilizing existing heavy vehicle routes where possible
- Route exposure to residence
- Slope and aspect of roads
- Forward planning
- Scheduling of heavy vehicle movements

Traffic Management Plan

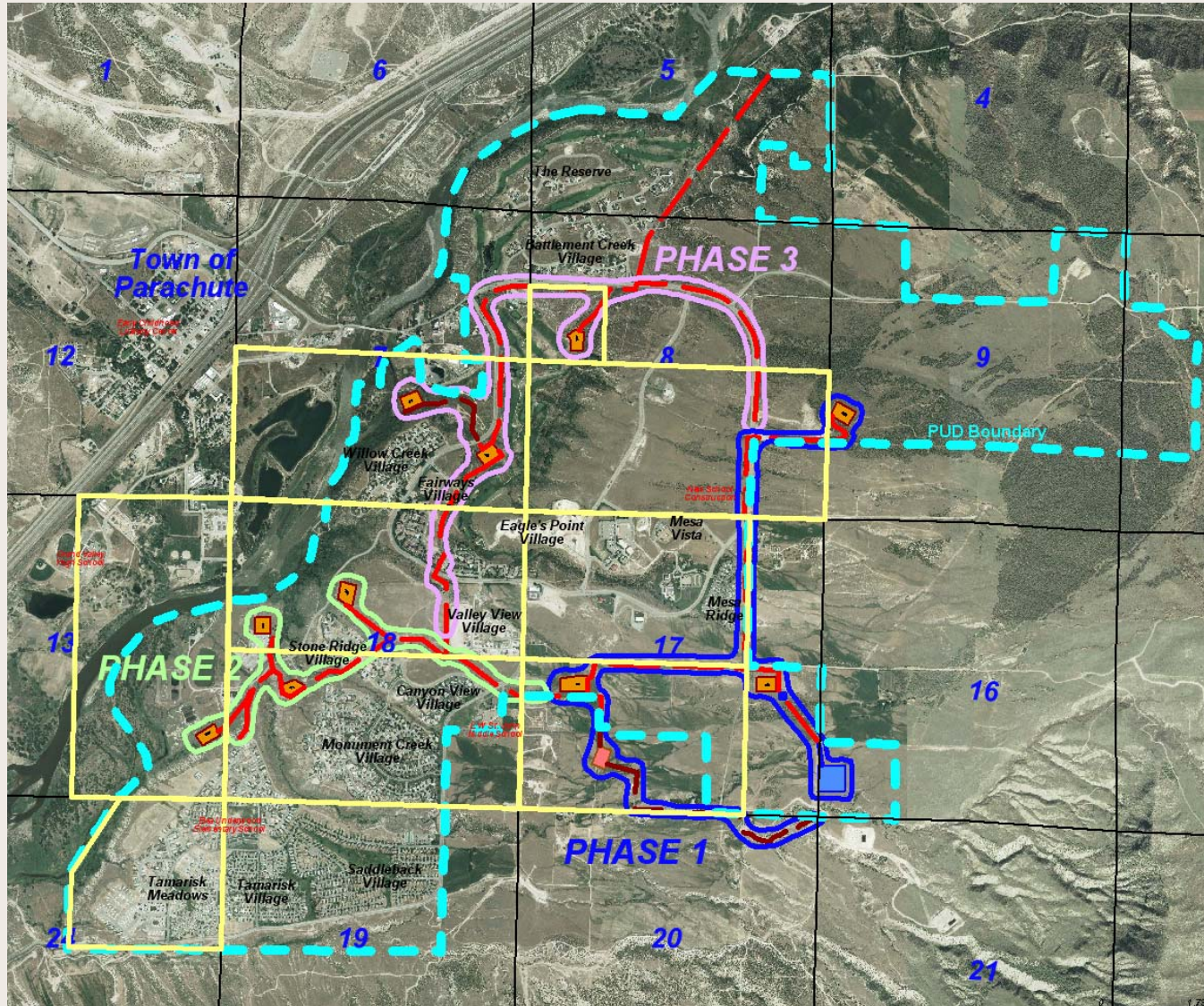
Timing and Scheduling – Potential for a Phased Approach



- **BMSA Oil and Gas Committee Mtg. #4**
 - **Phase 1** – Southeast portion of PUD
 - **Phase 2** – Southwest portion of PUD
 - **Phase 3** – Northwest portion of PUD
- Where practical, Antero Resources will allow forward scheduling and planning to grant equipment deliveries to occur during a time frame, whereby reducing impacts to residents by having scheduled movements of heavy vehicles during working hours with the exclusion of school bus operating hours.

Traffic Management Plan

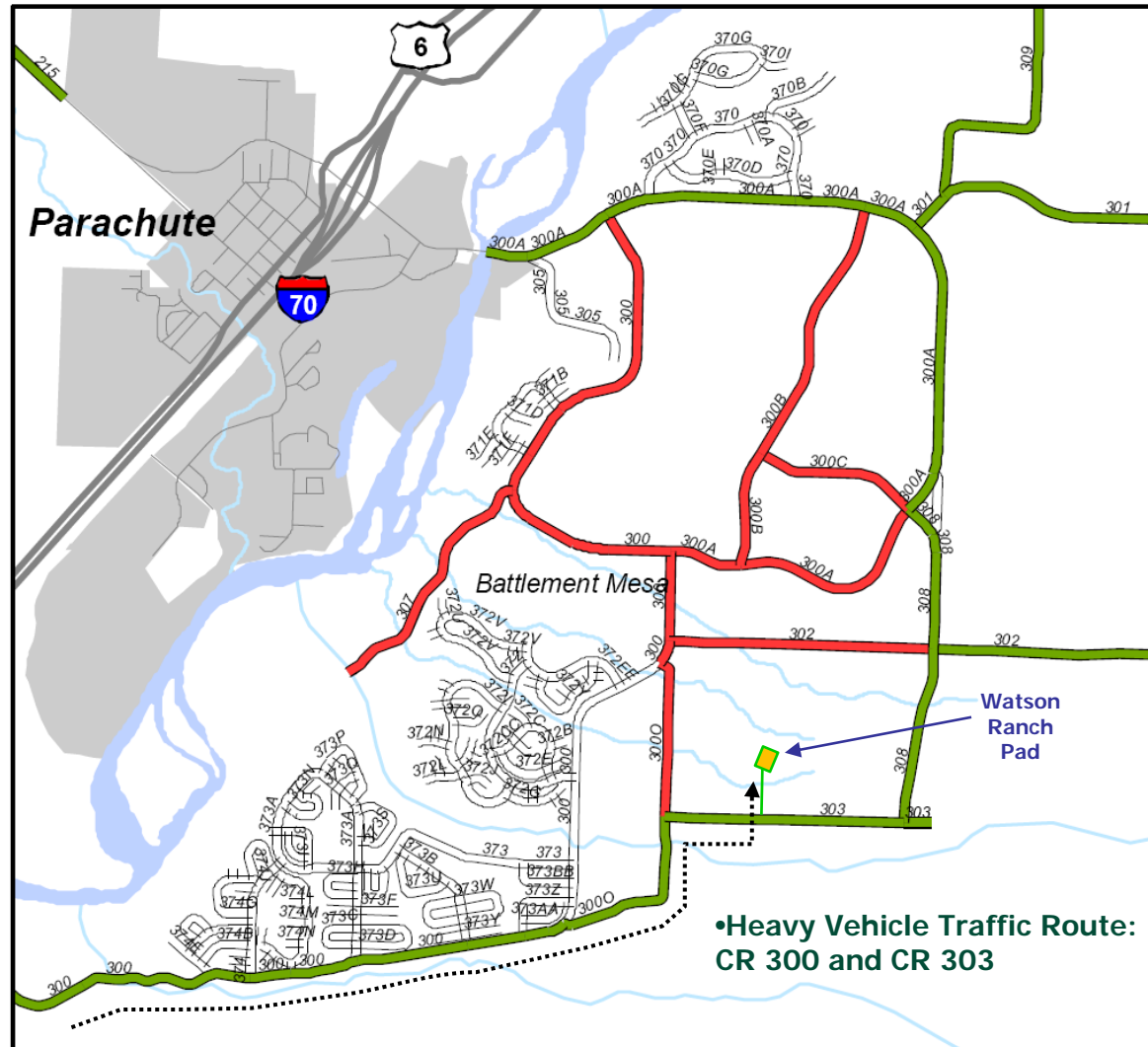
Timing and Scheduling – Phased Approach



Preliminary Schedule
Subject to Change

Traffic Management Plan

Phase 1 – Watson Ranch Pad



Traffic Management Plan

Traffic Study and Traffic Counts



- Major Land Use Review Permitting Process
 - Traffic study will be conducted as part of the application
 - Daily Traffic Counts on Major Roadways
 - 8 roadways have been identified (inside and outside PUD)
 - » Una Bridge
 - » Parachute Interchange
 - » Stone Quarry Road
 - » County Roads 300, 307, 308, 323
 - » US 6 - West of Parachute
 - Traffic Counters – tube counters (black rubber strips)
 - » Vehicle types - Light duty and Heavy duty
 - Predict Increase of Traffic due to Antero Operations
 - Evaluate the Adequacy of roads to handle the increase in traffic (potential road improvements)

Traffic Management Plan

Control Measures



Control Measures

- Will consider implementation of GPS motion logging technology
- Coordinate with Garfield County Roads and Bridges
- Notify in advance of substantial heavy vehicle movements
- Limit delivery times through forward planning
- Limit movements past schools and school bus routes
- Support signage where appropriate
- Utilize flagmen where appropriate
- Implement Dust/Mud mitigations

Traffic Management Plan

Oversize and Overweight Vehicle Permits



- All Garfield County roads are weight rated at 80,000 pounds for 5 axle units and 54,000 pounds for 3 axle units, unless otherwise posted at lower weight rating. All vehicles hauling loads over the posted weight rating of a road must have an oversize / overweight permit issued by Garfield County Road & Bridge Department.
- All companies allowing vehicles to obtain permits under their Garfield County bond must have a letter on file with Garfield County Road & Bridge Department stating what companies can operate under their bond prior to permits being issued.

Traffic Management Plan

Notification of Equipment Mobilization



Antero Resources has the following means of communicating substantial equipment moves:

- Battlement Mesa Oil & Gas Committee
- Energy Advisory Board meetings
- Community Counts
- Direct Corporate contact
- Garfield County Roads & Bridges

Traffic Management Plan

Antero Resources Existing Operations



Roads and Traffic

Work with Garfield County to review and define appropriate industry speed limits and signs and the county's Road & Bridge Department to obtain all permits, post bonds, and coordinate addressing designated routes, inadequate infrastructure and dangerous areas by creating:

- A plan for traffic management that takes into consideration blind corners and hills, narrow roads and bridges, and dangerous intersections.
- In addition, school bus routes will be avoided during designated hours by industry traffic during drilling and completion operations.
- If a school bus route cannot be avoided during drilling and completion operations, the areas near bus stops will be monitored by flagmen or security personnel during designated hours at industry's expense to protect children loading and un-loading from buses.
- A plan for ongoing dust mitigation using environmentally responsible substances.
- Signs informing truck traffic of "Limited Jake Brake Zones."
- Provide cost mitigation to the towns and the county for road Up-grades and road damage.
- The operator and all its subcontractors agree to abide by all traffic rules and speed limits.

Traffic Management Plan

Dust and Mud Mitigation



Dust mitigation

•The predominant operating area will consist of sealed roadways, limiting the presence of dust, however the pad location and access will be graveled to reduce dust impacts

Additional Best Management practices include

- Watering of roads
- Pad and access road construction materials
- Eco Friendly; Mag – Chloride
- Limiting vehicle speeds during pad site access

Mud Mitigation

•Operations that may attract the generation of mud being tracked on and off location shall be limited by material used in road construction. Operations shall consist of a hydraulic sweeping attachment to be utilized by operators at site upon regular intervals or as conditions dictate.

Traffic Management Plan

Speed Limits and Jake Brakes



- Antero Resources employees and contractors shall adhere to speed limits set by state, federal and county jurisdictions.
- Heavy vehicle operators, upon a heavy vehicle route, shall be monitored via Driver Reconnaissance Technology.
- Heavy vehicles shall have fitted Jake brake mufflers per Federal Regulation.
- Routes and loads will be determined to travel at an appropriate speed and gear ratio to limit the use of this safety device

Traffic Management Plan

Freeze-Thaw and Frost Laws



Freeze-Thaw and Frost Laws

Antero Resources continually engages with county roads and bridges, during the freeze-thaw periods to monitor roads conditions which may be subjected to adverse conditions and or potential deterioration of road surfaces. Additional restrictions are placed in such areas as confirmed by liaison with County roads and bridges as assessed on an individual basis. Heavy vehicle movement is limited by route and then timing in such instances to preserve road integrity.

Frost Law: CRS. 42-4-106: States

- Weight restricts specified roads to 35,000 pounds gross vehicle weight
- All vehicles over 35,000 pounds gross vehicle weight must have an overweight permit to operate on restricted roads. This permit is in addition to annual permits.
- Operating hours are from midnight to 06:00hrs unless otherwise permitted on weight restricted roads.
- CRS 42-4-106 can be applied any time of the year when road damage starts to occur for any reason, not just weather related.
- Roads can be closed or weight restricted to protect them from further damage until conditions improve if warranted.

Traffic Management Plan

Road Damages and Repairs



- Antero Resources continually engages with Garfield County Roads and Bridges, City of Rifle, Township of Silt and the BLM in maintaining roads in all operating areas whereby activities that have contributed to such damage are recognized and acted upon in a responsive manner by Antero Resources.

Traffic Management Plan

Weed Controls and Best Management Practices



- Colorado Division of Wildlife's Actions to Minimize Adverse Impacts to Wildlife Resources (October 2008)
 - II.
 - F. Invasive/Non-Native Vegetation Control:
 - Item 6: "Thoroughly clean vehicles and other equipment to remove weed seeds before moving equipment to new sites."

Question and Answer Session