C O N F I D E N T I A L  |  TEMS, Inc. / Quandel Consultants, LLC

Presentation To
Rocky Mountain Rail Authority (RMRA)

May 30, 2008
## Study Time Scales – Months 1 thru 6

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Month 1</th>
<th>Month 2</th>
<th>Month 3</th>
<th>Month 4</th>
<th>Month 5</th>
<th>Month 6</th>
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<td><strong>Steps 1 &amp; 2: Project Initiation, Peer Review</strong></td>
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## Study Time Scales – Months 7 thru 12

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| **Steps 1 & 2: Project Initiation, Peer Review**  
*Public Outreach and Data Collection*  
Task 1: Project Management  
Task 2: Peer Review  
Task 3: Scoping/Public Outreach  
Task 4: Data Collection  
- Market database  
- Engineering database  
- Technology database  
- Station database |
|       |         |         |         |          |          |          |
| **Step 3 & 4: Interactive Analysis & System**  
*Forecasts*  
Task 5: Preliminary Service Scenarios  
Task 6: Alternatives Analysis |
|       |         |         |         |          |          |          |
| **Step 5: Feasibility Analysis**  
Task 7: Financial and Economic Feasibility Analysis  
Funding, Institutional and Community Analysis |
|       |         |         |         |          |          |          |
| **Step 6: Business Plan**  
Task 8: Implementation Plan - Draft & Final  
Business Plan - Final |
|       |         |         |         |          |          |          |
| **Steering Committee Meetings** |
|       |         |         |         |          |          |          |
| **PMC Coordination Meetings** |
|       |         |         |         |          |          |          |
| **Monthly Progress Report** | 🟠 | 🟠 | 🟠 | 🟠 | 🟠 | 🟠 |
Study Objectives that will be met

FRA Public/Private Partnership Potential –

- POSITIVE OPERATING RATIO
- POSITIVE COST BENEFIT RATIO

This requires an assessment of six criteria –

- Identification of proposed corridors that have existing rail lines where railroad speeds of 90 miles or more per hour currently occur or can be expected to occur in the future.
- Projected ridership associated with the proposed corridors.
- Percentage of the corridors over which trains will be able to operate at maximum cruise speed, taking into account factors such as topography and other traffic on the line.
- Projected benefits to non-riders, such as congestion relief on other modes of transportation servicing the corridors.
- Amount of federal, State and local financial support that can reasonably be anticipated for the improvement of the line and related facilities.
- Cooperation from right-of-way (ROW) owners that can be expected in the operation of the high-speed rail passenger service in the proposed corridors.
The RMRA Feasibility Study will be completed using the...

**Business Plan Six Step Process**

- Stated Preference Survey
- Investment Grade Ridership Forecasts
- Computerized Track Database
- Community Economic Development
- Implementation and Business Plan
- Pro forma Financials

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**Business Plan Process**

1. **Step 1**
   - Databank Development
     - Public Outreach Data Assembly
     - Baseline Trip Tables
     - Presentation & Review Meeting

2. **Step 2**
   - Service Scenarios
     - Service Scenarios for Corridor
     - Service Scenarios
     - Presentation & Review Meeting

3. **Step 3**
   - Interactive Analysis
     - Interactive Analysis
     - Operating Strategies & Fare Structures
     - Presentation & Review Meeting
Business Plan Process – Part 2

Step 4
System
Forecasts & Outputs

Step 5
Institutional & Financing Plan

Step 6
Business Plan

Business Plan Process – continued

Ridership & Revenue Forecasts
Operating & Capital Costs

Specific Infrastructure,
Technology & Support Requirements
Identification of Preferred Alternatives

Presentation & Review Meeting

Financial & Economic Feasibility Analyses
Financing & Funding Arrangements
Institutional Framework
Allocation of Costs & Revenues

Potential Private & Institutional Support Structures

Presentation & Review Meeting

Implementation Plan
Business Plan Documentation

Critical Path Work Plan

Business Plan Report

PowerPoint Presentation
The work will be efficiently completed using the RightTrack™ Business Planning System.
Task 1: **Project Management**

- The TEMS Team will mobilize immediately.
- Meet with RMRA Steering Committee
- Prepare Management / Work Plan within 10 days.
- Obtain RMRA Steering Committee Approval of Management / Work Plan
Task 1: Deliverables

The TEMS Team will conduct the following management activities and coordinate with the RMRA:

1. **Project Management Plan Preparation** – A Project Management Plan will be prepared within 10 days of the Notice to Proceed.

2. **Steering Committee Coordination** – The TEMS Team will meet monthly with the RMRA Steering Committee.

3. **Coordination with the Project Management Consultant (PMC)** – The TEMS Team will meet/conference call bi-weekly with the PMC.

4. **Coordination with other study teams** (I-70 coalition, CDOT freight relocation, etc.).

5. **Preparation of meeting notes for all official project meetings** (excluding RMRA Board or Steering Committee meetings).

6. **Monthly progress reports and invoices.**
Task 2: Peer Review Panel Support

- PMC to set up Peer Review Panels.
- Three (3) Peer Review Panels, two (2) meetings each. Peer Review Process designed to increase creativity and provide guidance on methodology:
  - Meeting 1 to inform, review and discuss
  - Meeting 2 to advise and provide feedback.
- The Peer Review Panels will examine the following technical areas:
  - Travel demand, revenue, and model integration – A. Metcalf
  - Alternatives development and evaluation – C. Kraft
  - Overall system design, cost, finance and implementation – C. Quandel.
Task 2: Deliverables

For this task, the TEMS Team will prepare for Steering Committee and PMC review the following:

- Six PowerPoint presentations
- Meeting notes for all official project meetings (excluding RMRA Board and Steering Committee meetings)
- TEMS Team review and response to comments by the Peer Review Panels
Task 3: **Scoping / Outreach**

Business Plan Step 1: Database Development

- **Scoping Goal:** Obtain input/support for study goals, Purpose & Need and evaluation criteria
- **Three Scoping Workshops**
  - I-70 Coalition County Based Input Team
  - I-25 County Based Input Team
  - Denver Metro Area Sub-Team
- **Media Relations**
- **Community Partnership Program Outreach**
Task 3: Scoping / Outreach

- Monthly web/email updates
- Opportunistic materials development and outreach (e.g. community benefits)
- Technical and Policy Outreach:
  - Six County Based Input Team Workshops
  - Media Conference Calls
  - Plug-and-Play content to Community Partnership Team
  - Five Community Information presentations
Public Involvement Principles

- Provide cost-effective statewide interest and engagement
  - Community Partnership Program
  - Proactive media relations
  - Use rockymountainrail.org
- Leverage and complement I-70 Coalition work
- County Based Input Teams
Task 3: Deliverables

For this task, the TEMS Team will prepare for Steering Committee and PMC review the following:

- Stakeholder Outreach Approach technical memorandum
- Scoping technical report
Task 4: Methodology, Data Collection and Summary of Existing Conditions

Business Plan Step 1: Database Development

- Review Existing and prior reports/studies
- Develop four critical databases
  - Market
  - Engineering
  - Operations
  - Station/property
Task 4.1: Market Database

The market database will consist of **four components**: 

- **Origin / Destination Data** – Traffic movements by mode and purpose (business, commuter, special interest, tourist)
- **Socioeconomic Data** – Population, Employment and Income by zone.
- **Network Data** – Comprehensive modal networks will be developed for each mode of intercity travel (auto, rail and bus).
- **Stated Preference Data** – The survey will be similar to recent high speed rail surveys completed by TEMS in the Midwest (9 states), Ohio (5 states) Gulf (5 states) and Mid Atlantic (4 states).
We will use Investment Grade Methodology

COMPASS™ Model Structure

- Stated Preference Survey
- Origin-Destination Data
- Four-Mode Transport Network
- Base Year Socio-Economics
- Trip Matrices
- Demand Model Calibration
- Economic Scenarios
- Rail Strategies
- Travel Demand Model Run
- Forecast Year Trip Matrices
- User Benefit Analysis
- Economic Rent Analysis
- Revenue Analysis
- Financial Analysis
We will build a Sound and Comprehensive Database

“Using MPO and Stated Preference Data to create a sound behavioral database for passenger rail planning”
We will carry out a Stated Preference Survey

<table>
<thead>
<tr>
<th>Time (min)</th>
<th>Cost ($)</th>
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<tr>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>40</td>
<td>2</td>
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<tr>
<td>50</td>
<td>5</td>
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</table>

Legend:
- **1**
- **2**
- **5**
- **9**
Raising the Standard
Association of Mode and Rider Bias

- United/AA
- Maglev
- TGV
- Amtrak
Revenue Yield Analysis

- Revenue optimization by:
  - Corridor and market segment
  - City pair
  - Time of day

2020 Fare Optimization

Business Plan Assumption

Indianapolis-Louisville $/mile

Louisville Revenue
MWRSS System Revenue

Entire System

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Task 4.2: Engineering Database

The engineering database will consider both the east-west corridors and north-south corridors together with potential secondary corridors.

- The TRACKMAN™ program will provide a milepost-by-milepost record of rail gradients and geometry of the right-of-way.

- Data will be compiled from existing sources including:
  - Railroad timetables
  - Track charts
  - USGS topographic maps
  - Commercially available orthophotography and
  - As-built plans for the I-70 and secondary highways.

- The database will provide a basis for estimating potential route alignments
TRACKMAN™ will estimate the Engineering Capital Costs for each RMRA alternative

- Field Survey to **Verify Conditions** and Update TRACKMAN™ Track Chart Data
- Adjust Unit Costs to Local Engineering Conditions
- Develop Specific Infrastructure Proposals and Cost Estimates for each set of track or right of way **Speed Improvements** and **Line Capacity Upgrades**
In TRACKMAN™ we will develop detailed information on each route.

**Key inputs:** Speeds, curves, grades, rail and highway crossings, and other potential speed restrictions such as moveable bridges.

All the data is being captured in a consistent computerized format, to facilitate train performance and future line capacity evaluation.
RMRA Study Corridors to be evaluated

Potential Passenger Rail Corridors to be studied
Engineering Challenges & Developing Alignments

View West toward Base of Floyd Hill and US 6 Interchange Milepost 244

View East toward EJMT Tunnels Milepost 212

View West over Straight Creek Milepost 213.5

View West over Wolcott Curve Milepost 155
Challenges encountered on a Similar Project
Task 4.3: Technology Database

- The technology database will be developed by reviewing the results of previous studies, and soliciting information from manufacturers to update TEMS existing databank.

- It is anticipated that the focus will be on a wide range of high speed technologies from 90 to 125 mph, but will also consider the potential for new technologies to provide higher speeds.
LOCOMOTION™ will estimate Train Speeds and Timetables

- **LOCOMOTION™** generates optimized timetables for given track infrastructure, signaling systems, and train technologies. It provides milepost-by-milepost graphic output of train performance based on track characteristics and shows the effect on timetables for improving the track, using a different technology.

- Because **LOCOMOTION™** takes account of other passenger and freight traffic using a right-of-way, it can develop stringline diagrams and identify the optimum train path for a new service.
LOCOMOTION™ will be used to assess all the different technologies

**Speed Profile – Minneapolis to Duluth**

110-mph service -- 2:00 schedule

110-mph, 125-mph, 150-mph, 185-mph and 300-mph scenarios to be developed by the study
We will estimate Rail Operating Costs

Framework resulted from previous multi-year, multi-state planning efforts (e.g., MWRRI and Florida Business Plans)

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<th>Drivers</th>
<th>Cost Categories</th>
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<td>Train Miles</td>
<td>Equipment Maintenance</td>
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<td>Energy &amp; Fuel</td>
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<td>Train &amp; Engine Crews</td>
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<td>OBS Crews</td>
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<td>Operator Profit</td>
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<td>Passenger Miles</td>
<td>Insurance Liability</td>
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<td>Sales &amp; Marketing</td>
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<td>Track &amp; ROW Maintenance</td>
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<td>Feeder Bus</td>
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¹Station costs as well as sales and marketing are only affected weakly by ridership, so these two costs can be considered fixed for practical purposes.
How fixed and variable operating costs change with increasing train miles

**Fixed Cost per Mile Relationship with Volume**

Fixed Cost includes Stations, $4M  
Yard Ops., $6M  
Media & Phone Support, $6M  
Insurance, $22M  
Administration, related profit, ?M

- Loco/ 2.5 M.  
- Loco/ 5 M.  
- DMU / 5 M.  
- DMU / 7.5 M.  
- DMU / 10 M.  
- DMU / 12.5 M.  
- DMU / 15 M.
Task 4.4: Station and Property Database

- A property database will be developed for the corridors, which will assess existing properties along the rail line.
- The analysis will identify whether the property is residential, non-residential including commercial, industrial, vacant, agricultural, natural resources.
- An inventory of property values will be derived from state and federal property valuation sources (i.e., Colorado Division of Property Taxation and U.S. Department of Commerce-BEA Statistics).
Task 4: Deliverables

For this task, the TEMS Team will prepare:

- **Methodology technical report** to be submitted at the start of this task in support of the Peer Review Panel meetings (including outreach, ridership and revenue forecasting, cost estimating, alternatives development, and alternatives analysis)

- **Existing Conditions technical report** (including opportunity to upgrade existing track to accommodate high speed passenger rail service)
Task 5: Define Preliminary Service Scenarios for the I-70 and Front Range Corridors

Business Plan Step 2: Formulation of Rail Service Scenarios

In this task, the potential infrastructure and operations alternatives will be assessed in relation to the market demand for services to develop a set of potential alternatives.

Development of Initial Service Concepts

- **Base Level Service Concept** – a base level service operating within the context of a “stand alone” service.

- **Improved Service Concepts** – service improvements that would be associated with a refined level of engineering and operation considerations given the character of the market.
**Task 5: Deliverables**

**Alternatives Development Workshop**
- The TEMS Team will lead alternatives development workshops for each primary corridor with the RMRA board, to reach consensus on the range of alternatives to be carried into alternatives evaluation.

**Peer Review Panel Evaluation of Selected Alternatives**
- Following the Alternatives Development Workshop, the Peer Review Panel will be convened to review and evaluate the alternatives.

**Alternatives Development technical report**
Task 6: Alternatives Analysis
(Business Plan Step 3: Interactive Analysis and Business Plan Step 4 Systems Forecasts and Outputs)

The Interactive Analysis is designed to develop the most efficient and effective alternatives for passenger rail service in the RMRA Corridors. In these tasks, ridership and revenue are assessed against infrastructure needs and costs, and operating requirements and costs.

- To effectively predict the change pattern and overall rail travel demand levels for new rail systems, models are needed that can accurately forecast the impact of trip making increases and the role of the rail mode.
  - Ridership and Revenue Forecasts
  - Evaluation of Alternatives
  - Operating and Capital Costs
The key to the Business Planning process is the **Interactive Analysis** Methodology for developing an optimized plan.

**Existing Databases**
- Market
- Engineering
- Operations
- Financial
- Economic

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<th>Capital Costs</th>
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<th>Ridership &amp; Revenue</th>
<th>Financial &amp; Economic Analysis</th>
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<td>Operating Plan</td>
<td>Scenario Formulation</td>
<td>Fares, Stations, and Quality of Service</td>
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<td>Financial &amp; Economic Analysis</td>
<td>Report</td>
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**Scenario Formulation**
- Train Routes and Speed
- Train Technology and Service Levels
- Fares, Stations, and Quality of Service
Task 6: Deliverables

- Ridership and Revenue Forecasts technical report
- Alternatives Analysis technical report (to include technology, operating, and cost assumptions)
Task 7: **Feasibility Determination**

Business Plan Step 5: Assess both Institutional and Financial Plan Options

To provide a clear understanding of the value of different alternatives and route investments, the TEMS Team will carry out the follow-up analysis:

- Comprehensive financial analysis including cash flows
- Comprehensive user benefits (consumer surplus) and non-user benefits analysis
- Community analysis (Economic Rent) identifying jobs, income, property values

In addition, the TEMS Team will identify institutional and financing arrangements for the project.
RENTS™ will determine what technology and routes are financially and economically feasible and meet FRA requirements.

RENTS™ uses output from the COMPASS™ Demand Forecasting System to estimate the financial and economic benefits of a project:

- **Financial return** (Operating Ratio, NPV and IRR)
- **Economic return** (Gross and Net Consumer Surplus, NPV, and Cost-Benefit Ratio), and
- **Economic Rent** (Community benefits, such as changes in household income, employment by sector, property values, and population)

that result from infrastructure and technology improvements or timetable and fare modifications.
Exhibit 7.7 Minneapolis to Duluth 110-mph Rail Service: 8-Train Base Plan - Preliminary Operating Statement

<table>
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<th>Thousands of 2006 $</th>
<th>Total to 2040</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Track &amp; ROW Maintenance</td>
<td>$114,663</td>
<td>$3,954</td>
<td>$3,954</td>
<td>$3,954</td>
<td>$3,954</td>
<td>$3,954</td>
<td>$3,954</td>
</tr>
<tr>
<td>Station Costs</td>
<td>$40,547</td>
<td>$1,398</td>
<td>$1,398</td>
<td>$1,398</td>
<td>$1,398</td>
<td>$1,398</td>
<td>$1,398</td>
</tr>
<tr>
<td>Sales &amp; Marketing</td>
<td>$51,009</td>
<td>$643</td>
<td>$1,190</td>
<td>$1,358</td>
<td>$1,394</td>
<td>$1,429</td>
<td>$1,465</td>
</tr>
<tr>
<td>Insurance Liability</td>
<td>$43,345</td>
<td>$549</td>
<td>$1,015</td>
<td>$1,158</td>
<td>$1,188</td>
<td>$1,218</td>
<td>$1,248</td>
</tr>
<tr>
<td><strong>Total Other Operating Expenses</strong></td>
<td>$249,564</td>
<td>$6,544</td>
<td>$7,557</td>
<td>$7,868</td>
<td>$7,934</td>
<td>$7,999</td>
<td>$8,065</td>
</tr>
<tr>
<td><strong>Total Operating Expenses</strong></td>
<td>$853,703</td>
<td>$24,283</td>
<td>$25,757</td>
<td>$26,210</td>
<td>$26,306</td>
<td>$26,402</td>
<td>$26,498</td>
</tr>
<tr>
<td><strong>Cash Flow From Operations</strong></td>
<td>$366,957</td>
<td>($8,952)</td>
<td>$2,614</td>
<td>$6,175</td>
<td>$6,941</td>
<td>$7,707</td>
<td>$8,473</td>
</tr>
<tr>
<td><strong>Operating Ratio</strong></td>
<td>1.43</td>
<td>0.63</td>
<td>1.10</td>
<td>1.24</td>
<td>1.26</td>
<td>1.29</td>
<td>1.32</td>
</tr>
</tbody>
</table>
We will measure USDOT FRA approved economic benefits.

### MWRRS Example

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Billions in 1998 dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWRRS User Benefits</td>
<td></td>
</tr>
<tr>
<td>Consumer Surplus (e.g., time savings expressed as dollars)</td>
<td>6.4</td>
</tr>
<tr>
<td>System Revenues</td>
<td>6.8</td>
</tr>
<tr>
<td>Other Mode User Benefits</td>
<td></td>
</tr>
<tr>
<td>Airport Congestion Relief</td>
<td>0.7</td>
</tr>
<tr>
<td>Highway Congestion Relief</td>
<td>1.3</td>
</tr>
<tr>
<td>Resource Benefits</td>
<td></td>
</tr>
<tr>
<td>Air Carrier Operating Cost Reductions</td>
<td>0.4</td>
</tr>
<tr>
<td>Emission Reductions</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Total Benefits</strong></td>
<td><strong>$15.9</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital</td>
<td>$4.1</td>
</tr>
<tr>
<td>Financing</td>
<td>0.2</td>
</tr>
<tr>
<td>Operating and Maintenance</td>
<td>5.0</td>
</tr>
<tr>
<td><strong>Total Costs</strong></td>
<td><strong>$9.3</strong></td>
</tr>
</tbody>
</table>

| Ratio of Benefits to Costs             | 1.7                      |
Will estimate Annual Community Benefits

<table>
<thead>
<tr>
<th>Economic Rent Factor</th>
<th>110/4</th>
<th>125/4</th>
<th>110/8</th>
<th>125/8</th>
</tr>
</thead>
<tbody>
<tr>
<td>State of Minnesota:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment (# productivity jobs)</td>
<td>5,647</td>
<td>6,409</td>
<td>13,114</td>
<td>13,876</td>
</tr>
<tr>
<td>Income (2006$)</td>
<td>$252 mill</td>
<td>$285 mill</td>
<td>$583 mill</td>
<td>$616 mill</td>
</tr>
<tr>
<td>State Income Tax (2006$)</td>
<td>$10.6 mill</td>
<td>$12.0 mill</td>
<td>$24.5 mill</td>
<td>$25.9 mill</td>
</tr>
<tr>
<td>Federal Income Tax (2006$)</td>
<td>$28.5 mill</td>
<td>$32.3 mill</td>
<td>$66.0 mill</td>
<td>$69.7 mill</td>
</tr>
<tr>
<td>Property Value (2006$)</td>
<td>$722 mill</td>
<td>$817 mill</td>
<td>$1,672 mill</td>
<td>$1,767 mill</td>
</tr>
<tr>
<td>Property Tax (2006$)</td>
<td>$ 8.4 mill</td>
<td>$ 9.5 mill</td>
<td>$ 19.5 mill</td>
<td>$ 20.6 mill</td>
</tr>
<tr>
<td>Average Household Income (2006$)</td>
<td>$167</td>
<td>$189</td>
<td>$384</td>
<td>$406</td>
</tr>
<tr>
<td>State of Wisconsin:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment (# productivity jobs)</td>
<td>305</td>
<td>351</td>
<td>719</td>
<td>765</td>
</tr>
<tr>
<td>Income (2006$)</td>
<td>$15 mill</td>
<td>$17 mill</td>
<td>$34 mill</td>
<td>$37 mill</td>
</tr>
<tr>
<td>State Income Tax (2006$)</td>
<td>$0.5 mill</td>
<td>$0.6 mill</td>
<td>$1.2 mill</td>
<td>$1.3 mill</td>
</tr>
<tr>
<td>Federal Income Tax (2006$)</td>
<td>$1.5 mill</td>
<td>$1.7 mill</td>
<td>$3.5 mill</td>
<td>$3.8 mill</td>
</tr>
<tr>
<td>Property Value (2006$)</td>
<td>$45 mill</td>
<td>$52 mill</td>
<td>$106 mill</td>
<td>$113 mill</td>
</tr>
<tr>
<td>Property Tax (2006$)</td>
<td>$ 0.8 mill</td>
<td>$ 0.9 mill</td>
<td>$ 1.8 mill</td>
<td>$ 2.0 mill</td>
</tr>
<tr>
<td>Average Household Income (2006$)</td>
<td>$102</td>
<td>$117</td>
<td>$240</td>
<td>$255</td>
</tr>
</tbody>
</table>
Cincinnati Development Slides

Joint Development
Potential = $450 Million

Southeast Corner

East View
Task 7: Deliverable

Final Evaluation and Recommendation

Will identify an optimum high speed rail system alternative(s), with a clear rationale for the elimination of screened alternatives, and prepare a final evaluation of the feasibility of those system(s).
Task 8: **Documentation/Deliverables**

Business Plan Step 6: Implementation and Business Plan

For the selected alternative(s):

- Implementation plan
- Business plan
We will develop an Implementation Plan

<table>
<thead>
<tr>
<th>Ohio-Cleveland Hub</th>
<th>$ 1000's of 2002$</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-C Corridor</td>
<td>$1,090,801</td>
<td>PE</td>
<td>Final Design</td>
<td>Construction</td>
<td>Operation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleveland-Detroit</td>
<td>$387,101</td>
<td>PI</td>
<td>PE</td>
<td>Final Design</td>
<td>Construction</td>
<td>Operation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleveland-Pittsburgh</td>
<td>$487,624</td>
<td>PI</td>
<td>PE</td>
<td>Final Design</td>
<td>Construction</td>
<td>Operation</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Cleveland-Toronto</td>
<td>$803,996</td>
<td>PI</td>
<td>PE</td>
<td>Final Design</td>
<td>Construction</td>
<td>Operation</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key to Operation Phases:
- Phase 1
- Phase 2
- Phase 3
- Phase 4

Total Investment Costs by Year

<table>
<thead>
<tr>
<th>Planning and Implementation (PI)</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>$173,095</td>
<td>$68,175</td>
<td>$24,194</td>
<td>$30,477</td>
<td>$50,250</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Preliminary Engineering (PE)</td>
<td>$242,333</td>
<td>$15,908</td>
<td>$69,275</td>
<td>$45,600</td>
<td>$45,815</td>
<td>$54,011</td>
<td>$11,725</td>
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</tr>
<tr>
<td>Final Design</td>
<td>$276,952</td>
<td>$54,540</td>
<td>$73,895</td>
<td>$43,736</td>
<td>$64,581</td>
<td>$40,200</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>$2,077,142</td>
<td></td>
<td>$102,263</td>
<td>$445,341</td>
<td>$497,665</td>
<td>$367,106</td>
<td>$438,643</td>
<td>$226,124</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Infrastructure</td>
<td>$2,769,522</td>
<td>$84,083</td>
<td>$93,469</td>
<td>$130,616</td>
<td>$272,222</td>
<td>$543,088</td>
<td>$573,971</td>
<td>$407,306</td>
<td>$438,643</td>
<td>$226,124</td>
</tr>
<tr>
<td>Total Land</td>
<td>$233,209</td>
<td>$70,756</td>
<td>$57,930</td>
<td>$47,351</td>
<td>$57,172</td>
<td></td>
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<td></td>
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<tr>
<td>Total Rolling Stock</td>
<td>$322,000</td>
<td>$80,500</td>
<td>$80,500</td>
<td>$80,500</td>
<td>$80,500</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total Investment</td>
<td>$3,324,731</td>
<td>$84,083</td>
<td>$93,469</td>
<td>$130,616</td>
<td>$342,978</td>
<td>$601,018</td>
<td>$701,822</td>
<td>$544,977</td>
<td>$519,143</td>
<td>$306,624</td>
</tr>
</tbody>
</table>

Key to Implementation Stages:
- Project Development
- Preliminary Engineering
- Final Design
- Construction
We will write a Business Plan

--- Executive Summary
Summary of the Business Plan for reference by senior decision-makers

Chapter 1 Rocky Mountain Corridor Intercity Rail Services
Summary of the overall systems to be developed

Chapter 2 Target Markets and Proposed Service Offerings
Detailed description of target markets, market segments, associated rail service offerings, fare structures, and proposed ancillary services

Chapter 3 Projected Equipment and Capital Investment Needs
Summary of equipment and capital investment needs for both the rail service itself and ancillary services

Chapter 4 Operating Arrangements and Responsibilities
Proposed operating arrangement and responsibilities including cooperative agreements, with freight railroads, private sector participation and public/private partnerships

Chapter 5 Project Market Penetration, Patronage and Annual Revenues
Estimated market penetration by city pair and target market segment, estimated annual patronage and annual revenues for the rail system and associated services

Chapter 6 Estimated Operating Costs
Projected annual costs including rail service and ancillary operating, equipment, capital and debt service costs

Chapter 7 Financing Plan and Innovative Financing Options
Proposed financing plan including projected private sector contributions. Proforma Financial Statements

Chapter 8 Legal, Regulatory and Institutional Requirements
Assessment of critical legal, regulatory and institutional issues, including recommendations for potential action

Chapter 9 Potential for Added Revenue and Cost Reduction
Identification of potential innovative service arrangements, ancillary service offerings and potential operating procedures designed to either enhance revenue or reduce costs

Chapter 10 Service Implementation Plan
Description of the proposed rail service implementation program, by year and region together with the marketing program, institutional arrangements, and legal and financial agreements

Chapter 11 Business Plan
Comprehensive Business Plan assessment of the proposed rail system, and assessment of the risk associated with its implementation

--- Appendices
Detailed data tabulations supporting individual chapters

--- Presentation Materials
PowerPoint™ Presentation to be given to executives and senior decision-makers