



City of Grand Island

Tuesday, April 19, 2005

Study Session

Item -1

Presentation of the Railroad Corridor Safety Study

Staff Contact: Steve Riehle, City Engineer / Public Works Director

Council Agenda Memo

From: Steven P. Riehle, Public Works Director

Meeting: April 19, 2005

Subject: Railroad Corridor Safety Study

Item #'s: 1

Presenter(s): Steve Riehle, Public Works Director

Background

The community grew up around the Union Pacific and Burlington Northern Santa Fee railroads. As the community continues to grow and the train traffic increases, the concerns with rail crossing safety and delays increases. A long range and comprehensive plan for how we can address these concerns is needed.

Discussion

Kirkham Michael and Associates has been hired to perform the study and kicked off the study at an April 6th, 2005 meeting with city staff. The Council Kickoff of the study is being held this evening at the study session. The Public Kickoff of the study is set for Thursday evening, May 12, 2005 at Walnut Middle School. Since public participation is such a large component of the study, numerous public meetings will be conducted.

Conclusion



This item is presented to the City Council in a Study Session to allow for any questions to be answered and to create a greater understanding of the issue at hand.

It is the intent of City Administration to bring this issue to a future council meeting for the council to approve the completed study in November 2005.




Railroad Corridor Safety Study

Presented to
The City of Grand Island
City Council
April 19, 2005

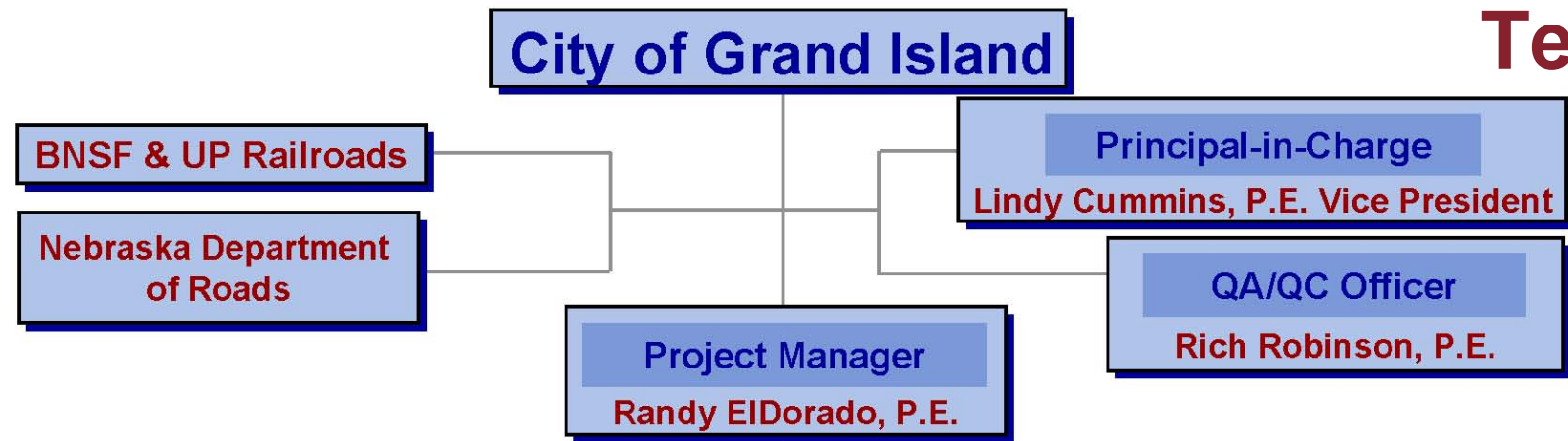


Agenda

Introductions	Randy ElDorado
Project Team	
Project Understanding	
 Project Approach	
Quiet Zone Evaluation	Rick Haden
 Key Design Issues	
Public Involvement	Randy ElDorado
Schedule	
Summary	



Project Team



Grand Island Railroad Corridor Safety Study

Roadway Design

Matthew B. McFadden, P.E.
Patrick W. Kastl, P.E.
Matthew J. Shimerdla, P.E.

Railroad Coordination

Randy EIDorado, P.E.
Kurt Anderson
Rick Haden

Public Involvement

Randy EIDorado, P.E.
Rick Haden

Traffic Engineering

Richard J. Haden
Michael C. Piernicky, P.E.
Jeffery Scherzberg, E.I.

Hydrology/Hydraulics

Matthew S. Krajewski, P.E.
Selma C. Kessler, P.E.

Grade Separation Analysis/Design

Steve Kneip, P.E.
Rob Leverington, P.E.
Joel Rossman, P.E.
Mantu C. Baishya, S.E.

Traffic Modeling

Shawn Leight

Environmental Services

Michael C. Piernicky, P.E.
Richard J. Haden
Ruth Bentzinger



Kirkham Michael



Railroad Controls Limited



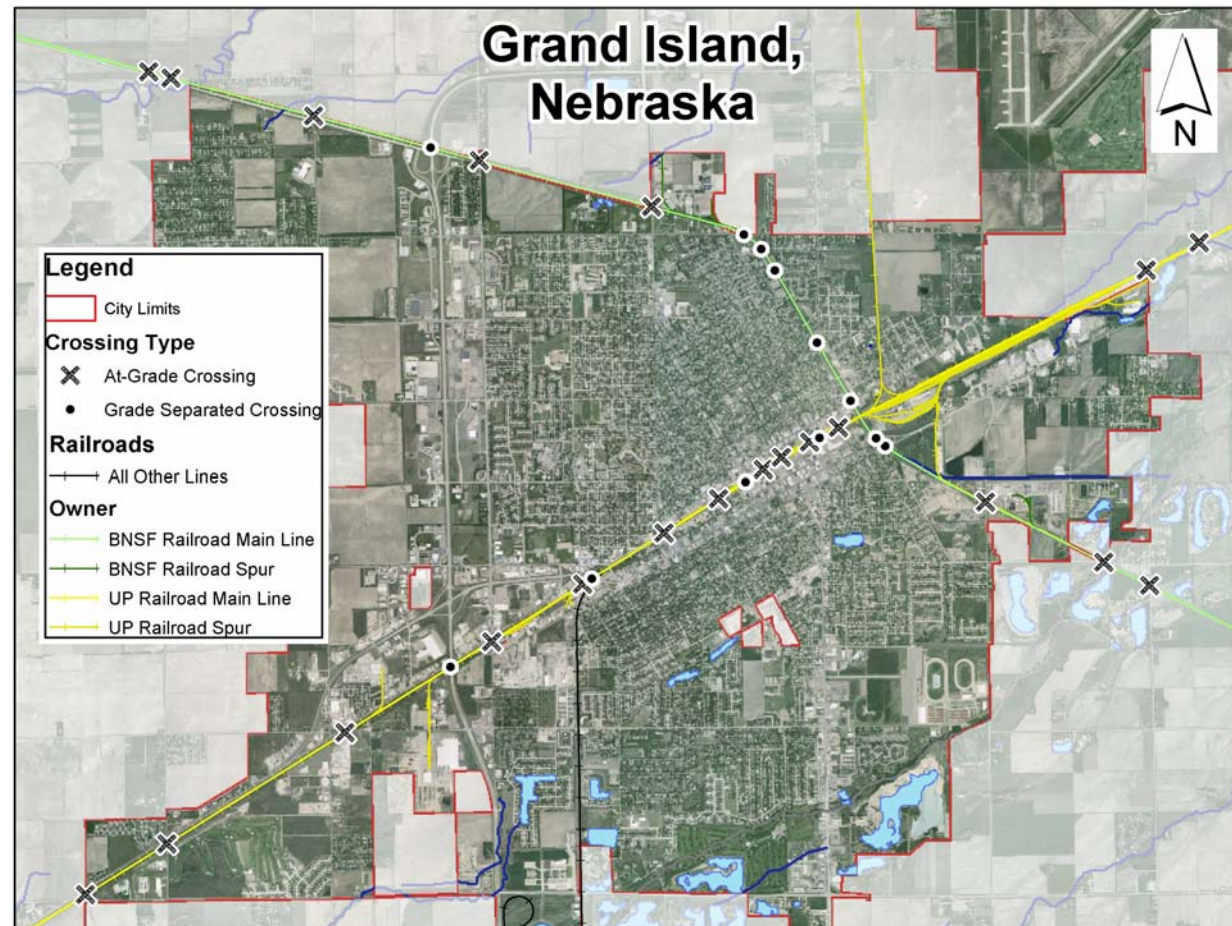
Crawford, Bunte, Brammeier




Project Understanding

- **Grand Island grew up around Railroads**

- UPRR
18 crossings
including 4 grade
separations
- BNSF
16 crossings
including 8 grade
separations






Key Study Issues

Impacts to Community

- Delay at Crossings
- Risk for Accidents
- Train Noise


Engage Public Dialogue

- Stimulate Community Input
- Educate Citizens
- Build Community Support



Key Study Issues

- **High Delay Leads to High Risk Behaviors**
 - Driving Around Gate Arms
 - Pedestrians Trespassing
- **Emergency Vehicle Response:**
 - Fire/Rescue
 - Police
- **Build on Comprehensive Plan**
 - Transportation Network Connectivity
 - Economic Vitality




A vertical black and white photograph showing a close-up of a railroad crossing. A signpost holds a 'RAILROAD CROSSING' sign and a 'ROAD CROSSING' sign. Below the signs are two black circular lights mounted on a metal frame.

Key Study Issues

- **Railroad Relocation**
- **Grade Separations**
- **At-Grade Crossings Improvements**


A color photograph of a railroad crossing. A white building with a red roof is visible in the background. A black light pole stands in the foreground, and a railroad crossing sign is visible on the left.


A color photograph of a wide railroad crossing with multiple tracks. Red and white striped crossing gates are visible on the right side. A black light pole stands in the foreground, and a railroad crossing sign is visible on the left.

A vertical black and white photograph showing a close-up of a railroad crossing. A signpost holds a 'RAILROAD CROSSING' sign and a 'ROAD CROSSING' sign. Below the signs are two black circular lights mounted on a metal frame.

Project Approach

- **Data Collection/Compilation**
 - Review of Previous Studies
 - Collision History
 - Existing Traffic/Train Data
 - Projected Traffic/Train Data
- **Comprehensive Transportation Plan**
 - Grand Island Traffic Model
 - Existing/Future Crossing Scenarios

A logo consisting of the letters 'KX' in a stylized, outlined font.




Project Approach

BNSF Grade Separations:

- Potential New Grade Separations
 - Exposure Ratings > 50,000

BNSF Crossing #	Location	Tracks	Daily Trains	Estimated ADT	Exposure Rating	Current Xing Protection
1	Shady Bend Rd	1	80	3,705	296,400	Flashers/Gates
2	E. Bismark Rd	1	80	3,335	266,800	Flashers/Gates
3	Stuhr Rd.	2	80	4,130	330,400	Flashers/Gates
4	1st Street	1	80	7,695	N/A	RR Structure
5	2nd Street	1	80	7,540	N/A	RR Structure
6	E 4th Street	1	80	4,290	N/A	RR Structure
7	E 10th Street	1	80	3,085	N/A	RR Structure
8	E 17/18th Street	1	80	560	N/A	RR Structure
9	20th Street	1	80	N/A	N/A	Ped Tunnel
10	Capital Ave	1	80	7,780	N/A	RR Structure
11	Broadwell Ave	1	80	5,440	435,200	Overhead Flashers/Gates
12	Webb Rd	1	80	1,880	150,400	Flashers/Gates
13	Highway 281	2	80	8,145	N/A	Highway Overpass
14	North Road	2	80	910	72,800	Flashers/Gates
15	Airport Rd	2	80	160	12,800	Flashers/Gates
16	Engleman Rd	2	80	200	16,000	Flashers/Gates

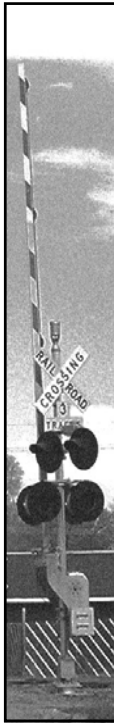


Project Approach

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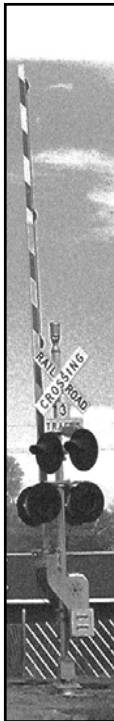


Project Approach

UPRR Grade Separations:

- Potential New Grade Separations
 - Exposure Ratings > 50,000

UPRR Crossing #	Location	Tracks	Daily Trains	Estimated ADT	Exposure Rating	Current Xing Protection
1	Husker Hwy	2	80	3,870	309,600	Flashers/Gates
2	Engleman Rd	2	80	1,100	88,000	Flashers/Gates
3	NorthRd/Stolley Pk	2	80	940	75,200	Flashers/Gates
4	Highway 281	2	80	18,555	N/A	Hwy Overpass
5	Webb Road	3	80	5,700	456,000	Flashers/Gates
6	Custer Ave/Blaine St	2	80	9,045	723,600	Flashers/Gates
7	Highway 30	2	80	15,500	N/A	Hwy Overpass
8	Broadwell Ave	2	80	10,015	801,200	Flashers/Gates
9	Lincoln Ave	4	80	600	48,000	Flashers/Gates
10	Eddy St	4	80	11,220	N/A	Street Underpass
11	Elm St	5	80	2,300	184,000	Flashers/Gates
12	Walnut St	7	80	3,880	310,400	Flashers/Gates
13	Pine St	6	80	5,000	400,000	Flashers/Gates
14	Sycamore St	6	80	8,200	N/A	Street Underpass
15	Oak St	3	80	1,600	128,000	Flashers/Gates
16	Shady Bend Rd	3	80	2,280	182,400	Flashers/Gates
17	Capital Ave	2	80	2,520	201,600	Flashers/Gates
18	Custer Avenue	1	1	9,045	9,045	Flashers/Gates (Spur)

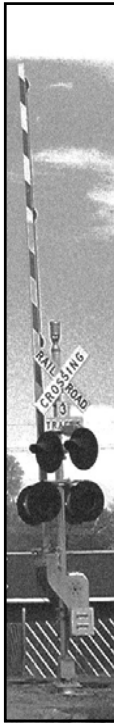


Project Approach

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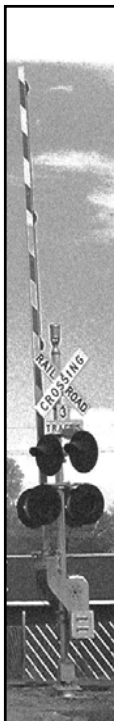
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18	Custer Avenue	1	1	9,045	9,045	Flashers/Gates (Spur)



Project Approach


- **Consider UPRR Track Relocation**
 - Identify Critical Features (Parks, Drainage Ways, Airport, Power Plant, Stuhr Museum)
 - Develop Alternative Routes (No-Build, North, and South)
 - Prepare Order of Magnitude Cost Estimate
 - Identify Impacts of Each Alternative
 - Identify Benefits of Each Alternative



Project Approach



- **Alternative Grade Separations**
 - City Aerial Base Maps – Hospitals, Police, Fire, Schools, Traffic Generators
 - Develop Alternative Roadway Networks
(2 Closures/Grade Separation)
 - Model Traffic Volumes (CBB)






Project Approach

- **Grade Separation Screening**
 - Benefits
 - Reduced Delay
 - Improved Safety-Less Railroad/Vehicle Conflicts
 - Arterial Continuity/Connectivity
 - Emergency Vehicle Access
 - School Traffic
 - Quiet Zones (Length)



Project Approach

- **Grade Separation Screening**
 - Impacts
 - Consolidated traffic on main corridors
 - Reduced Traffic on Business Corridors
 - Environmental
(Parks, Historic, Floodplains, Etc.)
 - Right-of-Way Acquisitions/Relocations



Quiet Zone



Potential Supplemental Safety Measures:

1. Closure Permanent: ☐
Nighttime: ☐
2. Four-Quadrant Gates: ☐
3. Channelization Island New: ☐
Replace with 7" Curb: ☐
4. One-way Street ☐
5. Wayside Horns ☐
6. Grade Separation ☐

Recommended Improvements:

Grade Separation _____
 Interim - Four-Quadrant Gates -OR- Wayside Horns _____

Construction Cost Estimate:

Item Description	Unit Price	Quantity	Total

Total Estimated Cost

Comments:

Exposure Rating - 801,200

Road: Broadwell Avenue
 Location: North of 2nd Street
 County: Hall
 Railroad: UPRR MP: _____
 FRA ID #: _____

Diagnostic Review Summary Date: _____

	OK	Install	Replace
Stop Bars:	_____	_____	X
RR Markings:	_____	_____	X
Adv. Warning Signs:	X	_____	_____
4 Flashing Signals:	_____	_____	_____
Flashers/Gates:	X	_____	_____
Cantilever:	_____	_____	_____
Preemption:	_____	X	_____
AC Power:	_____	_____	_____

Comments: _____

	Vehicular Data	Train Data
Daily Volume:	10,015	80
Speed Limit:	_____	60
Number of Lanes/Tracks:	2	2
Approach Grades:	_____	_____
Date of Counts:	2002	_____

Current With Quiet Zone

Crossing Risk Index

Corridor Risk Index



Broadwell Avenue and UPRR



Broadwell Avenue and UPRR

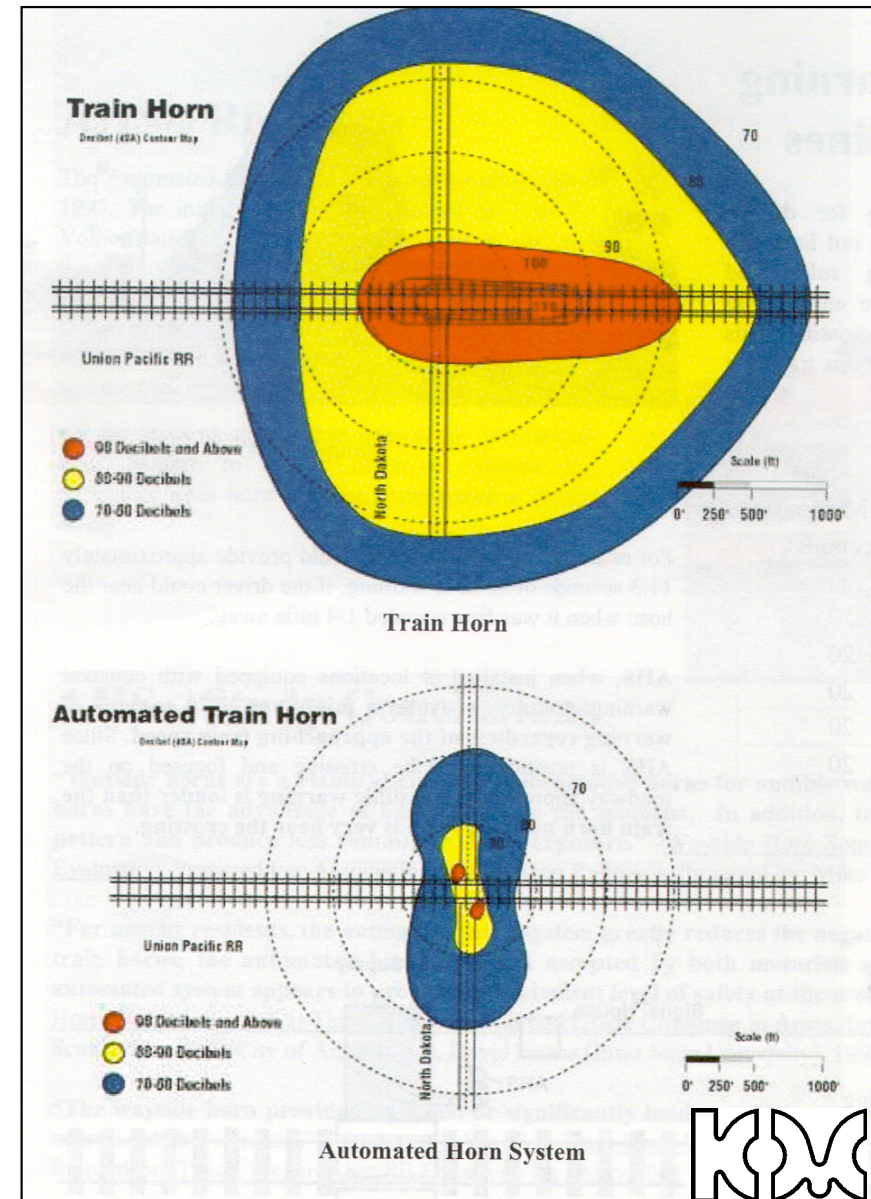



Broadwell Avenue and UPRR



Quiet Zone Evaluation


- **Diagnostic Team Review**
 - Existing Controls – Condition Appraisal
 - Vehicular and Train Data
 - Need to upgrade Crossing Protection
- **Long Range Improvements**
 - Crossing Closures
 - Grade Separations
- **Interim Improvements**
 - Existing Protection
 - Supplemental Safety Measures





Key Design Issues


- **Conceptual Evaluations**
 - Roadway Concepts
 - Preliminary Structure Dimensions
 - Cost Estimate
- **Railroad Coordination**
 - Clearance Requirements
 - Access Roads
 - Future Plans
- **Constructability**
 - Traffic Accommodation
 - Railroad Accommodation

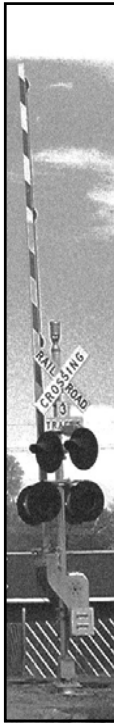


Public Involvement

Goals: - Build Community Support

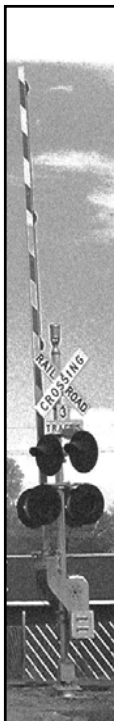
Objectives: - Engage the General Public
 - Inform Key Stakeholders
 - Listen to Relevant Ideas and Concerns
 - Educate Public about Issues





Public Involvement

- **Positive public involvement process:**
 - City, and KM define scope and roles
 - Identify key stakeholders
 - Focus Groups
 - Public Information Meetings
- **Public Kick-off Meeting**
 - Date: May 12th
 - Location: Walnut Middle School



Public Involvement

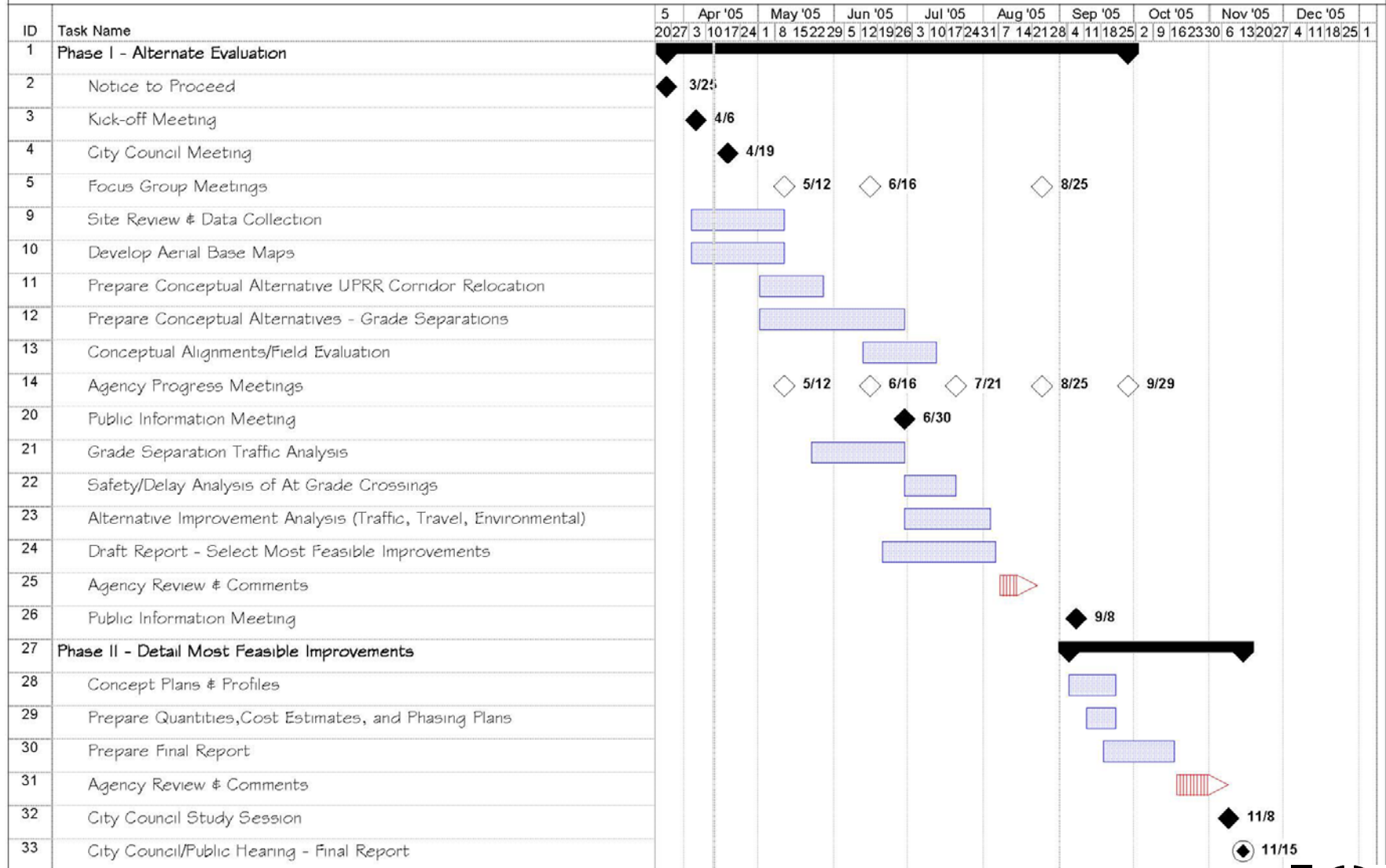
- **Tools for Engaging the Public:**
 - Website – www.GIRRStudy.info
 - Newsletters/Fliers
 - Meetings – documentation
 - Effective Graphics



Schedule

City of Grand Island Railroad Corridor Safety Study

Attachment A-1



Summary

Grand Island's Railroad Corridor Safety Study is an exciting and challenging opportunity for Grand Island.

We look forward to working with the City Council, Staff, officials and members of the community on this important project.

