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1. Work Plan

Introduction
In recent decades, the State of Arizona, including Yuma County, has experienced unprecedented growth rarely seen in other areas of the country. However, the economic development associated with this growth has largely been focused in the residential housing sector and related community services. The recent economic recession has highlighted Arizona’s economic vulnerability as a result of this narrowly focused growth. The Yuma Metropolitan Planning Organization (YMPO) is leading the effort in developing strategies to diversify the economic base of the region by initiating the Yuma County Rail Corridor Study.

The significant growth in both international and domestic cargo originating or arriving in Southern California has resulted in significant train traffic that passes straight through Arizona with minimal benefit to the State. Similarly, transcontinental truck shipments consume highway capacity causing congestion, damaging highway infrastructure, and negatively impacting the environment – all at a cost to Arizona with few, if any, benefits. The challenge that Yuma County faces is how to leverage its geographic position to become part of the value chain (see Figure 1) which can result in economic growth through job creation.

The “build it and they will come” strategy employed by the Union Pacific Railroad (UPRR) in 2006 was not supported by the Yuma County agricultural community when it came to purchasing lands for a rail route from the proposed deep seaport in Punta Colonet, Baja California Norte, Mexico. Arizona Common Sense was formed in response to UPRR’s actions and in 2007 lobbied for and was successful in the passing of HB2020 which requires that the Arizona Corporation Commission review any railroad proposal to acquire land or materials by eminent domain or auction. After the bill passed, the UPRR ceased its purchasing activities.

In August 2011, rail discussion in the Yuma area once again gained traction as the Yuma Greater Economic Development Corporation (GYEDC) and YMPO met with a commission from Mexico regarding rail and deep sea port opportunities at Punta Colonet. The Mexican Commission, charged with picking a new crossing location in the near future, requested that the Yuma area decide where a rail crossing should be located.

Figure 1 - Major Good Movement Corridors Through Southern Arizona
The Commission’s request coincided with the YMPO study to evaluate the interest/need for long-term and short-term economic development opportunities associated with rail. The long-term opportunity could be a major rail line with an inland commodity port option. The short-term opportunities would include the identification of economic drivers that could sustain short-line rail options with expansion capabilities in the future, independent of the development of Punta Colonet.

The Parsons Brinckerhoff team is keenly aware of the rail issues in the Yuma area and looks forward to the opportunity to assist YMPO in conducting this study. Table 1 on Page 3 documents the summary of the extensive reconnaissance our team conducted with potential Technical Advisory Committee (TAC) members in preparation for this RFP. The Parsons Brinckerhoff team’s extensive reconnaissance, coupled with our local knowledge and nationally known freight expertise, can provide the following value-added benefits:

- Strong local knowledge and an understanding of the Yuma community and its political and economic structure, which will facilitate efficient completion of the study.
- Outstanding rail and freight planning experts with national and international experience who will keep this study focused on providing workable options.
- Cost efficiencies for obtaining commodity flow analysis results as Parsons Brinckerhoff is preparing the MAG Freight Transportation Framework Study.
- Project Manager, Doug LaMont, who has worked in the Yuma area consistently since 2000 and will keep the study on schedule for a 12-month delivery and on budget.
- An established and highly respected local team member, Doug Nicholls of Core Engineering Group (Core) who understands the local community and its challenges.
- Working relationships with stakeholders and an understanding of their views, which will facilitate coordination and communication.
- International freight and customs expert, Federico (Kiko) Zuniga, who understands the issues that are critical to Mexican shippers.
- Strong public relations/stakeholder outreach professional, Kristin Bornstein, who has a thorough understanding of local concerns from past Yuma area projects.

Public Perception
Managing public perception is absolutely critical for this study. Our experience in the Yuma area is that the general public is not as engaged as the local agencies’ leaders. The stakeholders that represent the general public in the Yuma area want to be engaged and provide input on transportation issues. When it comes to rail, they are cautious because of the negative experience with the UPRR in 2006. The predominant view is that rail is not friendly to agriculture and that the long freight trains that pass through Yuma are a disruption with no benefit to the community. While highways and rail lines are highly visible to the public, the general public may not recognize how they can help diversify the local economy. Informing residents about how a rail line benefits the community is important to gaining public acceptance of rail strategies that will help foster future economic growth.

Study Objectives
The Yuma County Rail Corridor Study must fulfill five objectives:
1. Identify a preferred multimodal corridor that connects Mexico and Yuma County, creating a seamless freight network to promote economic development.
2. Develop a commodity flow summary, based on recent studies, that will identify existing and future freight movements by commodity, origin, destination, mode, volume and value from southern California and northern Mexico ports.
3. Locate desirable potential border crossings that accommodate anticipated commodity flows in and out of Yuma County from Mexico and other freight interests.
4. Investigate funding sources and develop a funding analysis and financing plan for short-term and long-term improvements.
5. Conduct stakeholder consultation and public involvement activities to inform and solicit input.

Organization and Approach
Parsons Brinckerhoff has assembled an outstanding team to deliver this comprehensive study, with experienced leadership and superior rail experts who have a full understanding of goods movement regionally and globally (Figure 2 - Organization Chart on Page 4). Parsons Brinckerhoff’s goods movement and transportation planning services include statewide and rail corridor planning studies, transportation
planning studies; port, air and rail planning; due diligence analyses for private sector infrastructure investments, and inland port/hub projects. We support planning for the operational aspects of moving freight in global supply chains utilizing all modes of transportation. We specialize in freight movement planning and analysis for maritime, rail and trucking modes. Our rail planning resources are further enhanced with international and domestic rail demand experts, transportation financial and public-private partnership (PPP) experts, transportation environmental and sustainability experts, and transportation economists. These experts will be supported by key personnel in Parsons Brinckerhoff's Tempe office and staff in Core's Yuma office, all of whom have established working relationships with key project stakeholders and a thorough understanding of the Yuma area's key issues.

Doug LaMont, as Project Manager, will lead the project team and serve as the point of contact for YMPO and all team members. Doug brings over 25 years of experience in multimodal transportation planning, management and final design. He has a thorough understanding of the concerns of the Yuma area stakeholders from management of projects for the ADOT Yuma District, the City of Somerton, and City of Yuma over

Table 1 – TAC Perspectives Summary

<table>
<thead>
<tr>
<th>Organization, Contact Name and Title</th>
<th>ADOT Utilities &amp; Railroad: Robert Travis, UPRR Liaison</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Major Concerns</td>
<td>- UPRR plans to start double tracking in the Yuma area in 2012</td>
</tr>
<tr>
<td>YMPO: Charlene Fitzgerald, Executive Director and Paul Patane, Sr. Transportation Planner</td>
<td>ADOT Multimodal Planning: Scott Omer, Director and Mike Kies, Deputy Director</td>
</tr>
<tr>
<td>- Focus on the Yuma County Community</td>
<td>- Focus on the Purpose and Need</td>
</tr>
<tr>
<td>- Transparent results</td>
<td>- Identify locations for future crossings</td>
</tr>
<tr>
<td>- Determine short line rail opportunities</td>
<td>- Coordinate with the State Rail Plan</td>
</tr>
<tr>
<td>- Determine long line rail opportunities</td>
<td>- Coordinate with other studies</td>
</tr>
<tr>
<td>Marine Corps Air Station: Paula Backs, Sr. Planner and Robert Misemer, Comm. Plans and Liaison</td>
<td>Union Pacific Railroad (UPRR): Zoe Richmond, Public Affairs Director</td>
</tr>
<tr>
<td>- Joint Strike Fighter program is a priority</td>
<td>- UPRR does not see a need for Punta Colonet</td>
</tr>
<tr>
<td>- Protect the range</td>
<td>- UPRR has no plans to build rail in Mexico</td>
</tr>
<tr>
<td>- South County to remain industrial</td>
<td>- UPRR has committed to YMPO to provide technical advice but will not talk about rail routes</td>
</tr>
<tr>
<td>City of Yuma: Greg Wilkinson, City Administrator</td>
<td>- UPRR does not have plans for rail extensions in Yuma</td>
</tr>
<tr>
<td>- Economic development group supports rail while other departments generally oppose it</td>
<td>- UPRR is hesitant to open old wounds from 2006</td>
</tr>
<tr>
<td>- Views the project as a short line study</td>
<td>- Double tracking plans in Yuma are in the works</td>
</tr>
<tr>
<td>Marine Corps Air Station: Paula Backs, Sr. Planner and Robert Misemer, Comm. Plans and Liaison</td>
<td>- Double tracking over the Colorado River is not in the current plan</td>
</tr>
<tr>
<td>- Need to keep the community apprised</td>
<td>Greater Yuma Port Authority (GYPA): Gary Magrino, Chairman, Board of Directors</td>
</tr>
<tr>
<td>- The project needs to consider a short line rail line</td>
<td>- Economic benefit analysis is key to selling rail to the community</td>
</tr>
<tr>
<td>- The project needs to consider a short line rail line</td>
<td>- Develop a consensus within the community</td>
</tr>
<tr>
<td>Greater Yuma Port Authority (GYPA): Gary Magrino, Chairman, Board of Directors</td>
<td>- Commission from Mexico wants to make Punta Colonet a reality</td>
</tr>
<tr>
<td>- Rolle Airfield area would make for a good industrial link</td>
<td>- The community needs to take advantage of a Class I rail line</td>
</tr>
<tr>
<td>- The community needs to take advantage of a Class I rail line</td>
<td>Greater Yuma Port Authority (GYPA): Gary Magrino, Chairman, Board of Directors</td>
</tr>
<tr>
<td>Yuma County: Paul Melcher, Planning Director</td>
<td>- Keep ADOT informed</td>
</tr>
<tr>
<td>- Need to consider previously discussed alignments</td>
<td>- Identify area that could impact ADOT facilities</td>
</tr>
<tr>
<td>- Need to consider short-term industrial opportunities</td>
<td>- Challenges with the inland port concept</td>
</tr>
</tbody>
</table>
the past 12 years. Figure 3 - Yuma Area Experience Map on Page 5 depicts Doug’s and Parsons Brinckerhoff’s extensive experience in the Yuma area.

Joe Gurskis, will serve as the rail planning lead for the team. Joe has 35 years of experience in freight and rail planning and is Parsons Brinckerhoff’s national expert on rail. He will provide the team with the expertise and perspective necessary to evaluate alternatives and communicate effectively with the YMPO, TAC members and other community leaders.

Tom Hester will serve as the financial and economic lead on the project. Tom has 21 years of experience in urban planning and is currently preparing the economic analysis for the MAG Freight Transportation Framework Study. This experience will allow our team to be efficient in compiling and interpreting the data needed to identify the direct, indirect and induced effects of this project.
Figure 3 - Area Experience Map

Yuma Area Project Experience

1. SR 195 ASH, 10 mi. Segment 4 — Final Design
2. Ave 3E, I-8 to 32nd St — Final Design
3. 32nd St, Ave 3E to Ave 5E — Final Design
4. Western Area Framework Study
5. US 95 Corridor Study
6. 16th St Arizona Ave to Yuma Palms Pkwy — Final Design
7. 16th St / Arizona Ave Intersection Traffic Signal Design
8. East Yuma Freeway, SR 195 to Ave 7-1/2
9. I-8/Ave 3E II — Final Design
10. US 95 San Luis to 32nd St — Final Design
11. Palmarco and Ave A Intersection — Final Design
12. 24th St Area — Wide Traffic Study
13. 4th Ave / 16th St Planning Level Cost Estimates
14. 16th St / 31st Dr Intersection Traffic Signal Design
15. 20th St / Ave D Intersection Design
16. 28th St / Ave B Traffic Signal Design
17. South 8th Ave & Catalina Dr Intersection Improvements
18. Arizona Ave / Palo Verde Intersection Design
19. Arizona Ave / Palo Verde Channelization Modifications
20. 6th St / County 14th Ave Functional Design
21. Somerton Ave, Pavement Preservation
22. YMPO Transportation Plan Updates
23. Yuma County Traffic Impact Study — Bienestar
24. Yuma County Traffic Impact Study — Fortuna
25. Moody/Kofa/Barkley Basin Design
26. Kmart Basin Design — 32nd St, Ave A to Ave B
27. 4th Avenue Pavement Preservation
28. Yuma Foothills Area Drainage Master Plan
Core is a strong local Yuma firm that has an extensive understanding of the transportation issues that are important to the Yuma area. The firm will provide public involvement support and assistance with the engineering aspects of the study. In addition, Doug Nichols, owner of Core, is an active member in the community and will assist in coordinating with the TAC and the public.

KDA Creative is an Arizona-based, certified woman-owned full-service creative communication and engagement firm. Kristin Bornstein of KDA will be the primary point of contact for all public involvement and outreach efforts. Kristin’s 20 years of project experience ranges from concept development to implementation of a wide range of initiatives across a variety of disciplines to message, plan and facilitate workshops and events, and develop multimedia materials, campaigns and websites. Her experience includes multiple projects in the Yuma area.

F. Zuniga, Inc. specializes in the movement of freight by rail and truck across the US/Mexican border. Fluent in both English and Spanish, Federico (Kiko) Zuniga was a member of the US Government’s COAC (Commercial Operations Advisory Committee) for the oversight of Customs and Border Protection for the Secretary of the Department of Homeland Security and thus fully understands both US and Mexican customs and trade issues. Kiko has key relationships with the Mexican Secretary of Communications and Transportation and will assist with facilitating communication as needed.

Through our work on the MAG Freight Transportation Framework Study, our team has a deep understanding of the commodity flows in and out of Arizona – including the shipper’s perspective, carrier’s perspective, freight economics, transportation infrastructure design engineering, urban planning, public policy (including State, Federal and Mexican), environmental concerns and the operational aspects of ports, ocean carriers, railroads and truckers.

Our team’s understanding of the Yuma area transportation issues is strengthened through our work on planning studies and final design projects such as the East Yuma Freeway and 15 miles of the Area Service Highway on a new alignment, respectively. From this experience (see Figure 3 on Page 5), we have established solid relationships with the local community that were built on successful project delivery, effective communication and mutual trust.

Study Approach

The Parsons Brinckerhoff team offers a straightforward, three-phase process for delivering the Yuma County Rail Study and it is illustrated in Figure 4. The three-phases are:

1. Phase I: Information gathering and issue identification (Tasks 1 and 3)
2. Phase II: Alternatives analysis (Task 4)
3. Phase III: Plan development (Task 5)

Please note that Task 2 begins in Phase I and continues throughout the phases.

We will work with the entire stakeholder team to develop a full understanding and appreciation of how commodities flow in and out of the Yuma region. We will also determine if a rail system would provide sufficient economic benefits to be considered as a viable mode of transportation and be a driver for economic development.

The basis of our approach is to obtain and understand current data that describes how and why freight moves both regionally and nationally through the Yuma area. For data to be “valid and verified”, it must come from a variety of sources. We will gather publicly available information (e.g., research results from the Parsons Brinckerhoff-prepared MAG Freight Transportation Framework Study, the Arizona Multi-Modal Logistics Study and approved General Plans from the various stakeholder agencies) to ensure the planning process is based on statistically valid data. The data will not only quantify commodity movements in and out of the Yuma area, but also the specific type of commodities being moved. This level of detail obtained from these sources is essential to understanding the potential economic opportunities and benefits an effective goods movement strategy could mean to the Yuma area.

Tasks

Task 1 - Initiate Project

Developing a mutual understanding of the project’s scope, including task assignments, deliverables and schedule is not only good project management but creates the foundation for the YMPD/Parsons Brinckerhoff teamwork that will be critical for the success of the study. Our approach is to conduct a kickoff meeting with partner agency management staff, TAC members, other stakeholders, and our task leaders to fully discuss and develop a common understanding and appreciation for the forthcoming work effort. At the meeting, we will present the draft work plan and describe: 1) each task and the proposed approach, 2) how staff resources will be utilized, 3) how we will coordinate with Mexico’s transportation officials, 4) our quality control plan, 5) roles and deliverables for participating partner agency resources and staff, and 6) how we propose to deliver the project within the schedule.
and budget. Comments will be solicited and the work plan finalized and distributed to the team.

**Task 1 Deliverables**
- Scope of services document, including an itemized budget
- Quality assurance plan for deliverables, including formats
- Public and Working Group participation process, including the identification of TAC members
- Meeting Work Log

**Task 2 - Establish Public Involvement Plan**
Success for the Yuma County Rail Study will require engaging the right stakeholders at the appropriate time and with the appropriate level of detail. It will also be important to inform the public about the value of rail transportation to the Yuma area economy, which is the reason for the study.

**Public Involvement Process**
To move infrastructure projects and freight-friendly initiatives forward, public understanding and appreciation of the economic benefits to the region is critical. Our effort will focus on working collaboratively with YMPO staff to develop and deliver this message to the community. At project inception, we will develop a public involvement plan jointly with YMPO.

Kristin Bornstein of KDA Creative will lead our public involvement effort. Kristin brings significant local knowledge and experience interacting with stakeholders in Yuma and throughout Arizona about rail and other transportation/public infrastructure investments. Specialized public and stakeholder involvement is a key element of our approach, which solicits input from selected audiences. We understand the potential dynamics of a community dialogue on rail, which requires engaging the right people at the right time. When it comes to general public dialogue, we will keep messages at a high level and make participation convenient for them. Not only does this simplicity and convenience increase participation, it also heightens awareness of the ultimate project goals, paving the way for successful implementation of ideas.

We are proposing the creation of a project **Study Review Team (SRT)** and a **Technical Advisory Committee (TAC) Group** as well as the use of focused public involvement, building upon the existing partner agency committees such as the CANAMEX Task Force and ADOT MPD.

**Study Review Team (SRT):** Maximum of 5 individuals (including the YMPO’s Project Manager, Parsons Brinckerhoff’s Project Manager, and local firm Core’s Project Manager) who are active in the community, knowledgeable about economic development activities and understand the political environment in Yuma.

**Technical Advisory Committee (TAC) Group:** We propose using components of the partner agencies’ existing committees. We recommend that the number of participants not exceed 15.

**Focused Public Involvement**
First, the Parsons Brinckerhoff team will collaborate with the TAC to obtain an understanding of the local leadership’s concerns and issues regarding rail. We will then build upon that foundation to develop a general public/media awareness. Our goal is to communicate the benefits to the Yuma region’s economy that can be derived from increased rail freight traffic and a logistics center.

We propose regular updates of the rail planning process for partner agencies’ Executive Boards or senior management. If these meetings are open to the general public, we suggest inviting them to attend and participate within existing rules. Experience in these projects shows that unless there is a direct, immediate, and tangible impact of the study to members of the public, they will not be enticed to attend public meetings, and the resources expended on such an effort could be better used on other outreach efforts.

Parsons Brinckerhoff developed this photosimulation of the 16th Street Project to use during the public information efforts.
Making information readily available to the public will be essential to ensure a transparent study and to gain local support. To achieve this, we will support the stakeholder agencies by providing information suitable for distribution through a project webpage and/or on agency websites including bqAZ.org, through regular publications like the Yuma Sun and the Marine Corps Air Station’s Desert Warrior newsletter, and through popular social media like YMPO Tweets.

The Parsons Brinckerhoff team will work with the SRT to develop a public involvement plan to engage the TAC members in the study and gather necessary information. The plan will focus on engaging key stakeholders in the process while informing the general public about the study. It will be particularly important to present and discuss the economic implications of goods movement to and through the region. To maximize public exposure, information developed as part of the study will be presented in the context of public events and forums throughout the YMPO region. This may include a presence at community events, a significant online dialogue, or other creative ideas versus a traditional public meeting that typically yields poor attendance.

To grow Yuma’s economy, collaboration between stakeholders and the public sector is required. Our approach will focus on communicating the economic benefits of the goods movement industry as documented in the study. Our public involvement plan will recommend that appropriate study information and materials be made available through partner agency websites, regular publications, and social media, so that members of the public can review the study documents, and have a means to provide input (e.g., email, phone, online responses).

**Task 2 Deliverables**
- Public Involvement Plan including Public Involvement Summaries

**Task 3: Current and Future Conditions Data Collection**

The objective of this task is to identify and fully comprehend the commodity movements into, out of, within and through the Yuma region. We will accomplish this by cost-effectively assembling the quantitative and qualitative information required to develop the Yuma County Rail Corridor Study.

The data will describe the region’s rail traffic, rail infrastructure, rail operations, and the regional economy. Representative publicly available data sources include the Arizona Rail Plan, MAG Freight Transportation Framework Plan, Arizona Multimodal Logistics Center Plan, General Plans Updates (e.g., San Luis, Somerton, Wellton and Yuma), the Parsons Brinckerhoff prepared Yuma Regional Transit Study, regional planning studies (e.g., Dome Valley/Wellton, Foothills, Martinez Lake, Dateland, South Mesa, Yuma Valley, North Gila, Northwest Yuma, South Gila Valley and South Suburban area), Public Private Partnerships for Arizona-Mexico Infrastructure Study, UPRR and Ferromex company documents, existing GIS data, as well as primary research in the form of in-depth interviews.

The SRT and TAC will be involved in this task: 1) to identify missing information, 2) to obtain a perspective early in the study of the full spectrum of freight transportation issues, and 3) to understand why an effective freight framework is so important to the realization of the economic benefits from the vast quantity of commodities that passes through Yuma County.

**Task 3.1 Data Collection Plan:** A key part of this task is creation of a data collection plan in cooperation with YMPO. To be successful on this study, experience tells us we need to accurately and reliably assemble previous rail alignment alternatives, area transportation plans, environmental reports, current study data, aerial photography and GIS and mapping data base information. Parsons Brinckerhoff team members
will work with the partner agencies to review the utility of various data sets – and the cost and benefit of adapting the data for YMPO’s current and future use in terms of process and reproducibility.

**Task 3.2 Current Conditions:** To create a GIS “picture” of regional infrastructure, the Parsons Brinckerhoff team will research and inventory relevant data from secondary sources: past studies, ADOT data, and primary sources such as UPRR and Ferromex mapping data. As part of the inventory the Parsons Brinckerhoff team will work with YMPO, Yuma County, MCAS, ADOT, Yuma Port Authority, GYEDC, the CANAMEX Task Force, US-Mexico Joint Working Committee as well as the local agencies to identify the rail, truck, and pipeline routes, and their significance.

For the regional rail system, our team will show rail ownership, volume (which might only be available at certain thresholds), and track condition summary level. Finally, the inventory will include intermodal transfer facilities in addition to current and permitted major inland distribution hubs, which include rail-truck terminals and the San Luis border crossing staging area.

**Task 3.3 Rail and Freight Forecasts:** The team will coordinate closely with the UPRR and Ferromex to obtain current plans for rail activity as well as future rail use activities. In addition, the team will coordinate with the MAG Freight Transportation Framework Study to summarize commodity flows and existing freight movements, by mode, volume and value. Current research indicates that $577-million of freight was generated in 2010 from Arizona imports through the San Luis Border II via trucks.

**Task 3.4 Future Conditions:** The team will assess the viability of a major rail system as well as a short line rail that could be expanded to a major rail line in the future. In addition to the proximity to the existing deep sea port of Guayms along the Gulf of California, there is also potential for the Yuma area should another deep port be established in Punta Colonet. The Mexican Secretaría de Comunicaciones y Transportes (SCT) recently reported that a deep sea port in Punta Colonet could realize a capacity of 6 million Twenty-foot Equivalent Units (TEUs) in the year 2022. This could create over 24,000 jobs for the initial construction phase and over 59,000 jobs during the operations phase of the port and rail line. One of the critical items our team will estimate is how many TEUs could be handled by a multimodal commodity port located in Yuma County for distribution to other parts of the US.

The Parsons Brinckerhoff team will present a preliminary analysis of the rail system to the TAC. This will include identifying key performance parameters of the components of the rail system including network capacities, as well as future economic, technical and regulatory factors that will play a major role in regional goods movement in the years to come. We will identify the principal drivers of rail system demand and how those drivers will affect distributors of goods.

**Task 3 Deliverables**
- Data Collection Plan
- Inventory and GIS mapping of regional freight infrastructure, to include freeway truck volume and congestion; freight rail volume and congestion; air freight inventory; and intermodal facilities with transfer capacity where available
- Presentations to the SRT and TAC
- Documentation of all data in a technical memorandum

**Task 4 – Alternatives Analysis**
The objective of this task is to define potential rail route corridors, establish evaluation criteria, and conduct an alternatives analysis which will include an environmental overview, corridor evaluation, rail operations, port of entry requirements and multimodal logistics center operations. This task comprises the core analytic work of the study. It will also be the most controversial aspect of the study due to stakeholder, policy-maker and public perception of the validity of the data.

We will utilize the findings to create a coherent “story line” that addresses major issues, including the development of corridor evaluation criteria. Through discussions with the stakeholders, we understand that several potential corridors have surfaced for consideration. The four most often mentioned are briefly described below.

1. A corridor that begins at the San Luis Port of Entry I and runs north-south along the existing Yuma Valley Railway (adjacent to the Colorado River), connecting into the existing UPRR line near I-8. The challenge with
this alignment is the geometrics required to connect to UPRR line on the north end and sensitivity of placing a rail line along the San Luis community.

2. A corridor that starts at the San Luis Port of Entry II and follows (in general) the Area Service Highway alignment, connecting into the existing UPRR line west of Wellton. Challenges include negotiating around Auxiliary airfield 2 (AUX-2), Joint Strike Fighter (JSF) space, potential grade separations required across the ASH, I-8, Co. 14th St. and in Wellton.

3. A corridor that starts at the San Luis Port of Entry II and runs north-south along Avenue 3E, connecting into the UPRR near I-8. The east side of Avenue 3E appears to be a logical solution since an existing Dept. of Navy owned rail line exists between the MCAS complex (with a buried rail line under the under 32nd Street pavement) and existing UPRR south of Gila Ridge Road.

4. A corridor that starts west of Algodones (with an inland commodity port located in California) and connects to the UPRR line. This alternative would require a second crossing of rail over the Colorado River which, according to Zoe Richmond (UPRR), requires approvals from 19 agencies and 5-7 years to process.

The Study Area Features Map shown as Figure 6 on Page 11 intentionally does not show the above alternatives as our approach is to start with a “blank slate” with the SRT and TAC team.

We will evaluate potential opportunities for an inland commodity port location with each alternative that is considered. We understand that community input is vital to the success of the project and we will remain open to other corridor ideas brought forth by the SRT and TAC (including the No-Build option).

Task 4.1 and 4.2 Alternative Route Identification and Definition: We propose to employ a simple approach

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**Figure 5- Sample Evaluation Matrix from a Study in Peoria, AZ**

**EVALUATED CRITERION**

<table>
<thead>
<tr>
<th>ALTERNATIVE 1N</th>
<th>RECONSTRUCT ROADWAY ON EXISTING ROADWAY ALIGNMENT</th>
<th>ALTERNATIVE 2N</th>
<th>SHIFT ROADWAY TO THE EAST OF THE EXISTING ROADWAY ALIGNMENT</th>
<th>ALTERNATIVE 3N</th>
<th>SHIFT ROADWAY TO THE EAST OF THE EXISTING ROADWAY ALIGNMENT</th>
<th>ALTERNATIVE 4N</th>
<th>NORTHBOUND TRAFFIC ON EXISTING BRIDGE</th>
<th>&quot;NO BUILD&quot; OPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limitations</td>
<td>2) The alignment is incompatible with the City of Peoria's vision for a parkway typical section.</td>
<td>2) The alignment is incompatible with the City of Peoria's vision for a parkway typical section.</td>
<td>2) The alignment is incompatible with the City of Peoria's vision for a parkway typical section.</td>
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<td>2) The alignment is incompatible with the City of Peoria's vision for a parkway typical section.</td>
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<tr>
<td></td>
<td>4) Alternatives for crossing the CAP not included in this matrix.</td>
<td>4) Alternatives for crossing the CAP not included in this matrix.</td>
<td>4) Alternatives for crossing the CAP not included in this matrix.</td>
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<td>4) Alternatives for crossing the CAP not included in this matrix.</td>
</tr>
<tr>
<td></td>
<td>3) Right-of-way does not include the right-of-way required for new local streets identified in the Access Management Plan.</td>
<td>3) Right-of-way does not include the right-of-way required for new local streets identified in the Access Management Plan.</td>
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<td>Minimizes impact to surrounding land as the proposed corridor follows (in general) the Area Service Highway alignment, UPRR line on the north end and sensitivity of placing a rail line along the San Luis community.</td>
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**Estimated Cost**

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<th>ALTERNATIVE 1N</th>
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<th>ALTERNATIVE 2N</th>
<th>$20,391,196</th>
<th>ALTERNATIVE 3N</th>
<th>$20,375,490</th>
<th>ALTERNATIVE 4N</th>
<th>$20,375,490</th>
<th>&quot;NO BUILD&quot; OPTION</th>
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**Assumptions**

1) Damage metrics are similar among alternatives.
2) Right-of-Way costs not included in "No Build" alternative as there is no existing Right-of-Way.
3) Right-of-Way does not include the right-of-way required for new local streets identified in the Access Management Plan.
4) Altawptions for crossing the CAP are not included in the matrix.
5) Alternatives for the SRT/RT configuration not included in the matrix.
6) No impact indicates the elimination of the alternative from further evaluation.
of identifying a starting point and ending point, and then evaluating constraints, and geometric challenges located along a particular corridor. Based upon the constraints, a corridor alignment may be altered accordingly. Physical constraints such as buildings, environmental issues (flat-tailed horned lizard), gummy ranges, agricultural considerations, ground slope and hydrology, irrigation canals, and roadway crossings will be identified and documented in an Evaluation Matrix. Field inspections of proposed alignments will be conducted with the YMPD Project Manager to evaluate their viability.

Task 4.3 Evaluation Criteria: We will identify metrics to evaluate various alternatives. Please see Figure 5 on Page 10 for a sample evaluation matrix from another study. The metrics will measure connectivity, feasibility of implementation, community input, consistency with local and regional plans, meeting user needs, safety and congestion mitigation, traffic impacts and other performance parameters. At this stage the performance measures will be used as a screening tool rather than input to a complex benefit-cost analysis. The evaluation criteria will be approved by the SRT and TAC prior to moving forward with analysis.

Task 4.4 Alternative Analysis: We will look at long-range alternatives for major rail lines as well as interim short-line rail opportunities that could be expanded in the future. For planning purposes, “long range” is defined as 30 years to match the RFP requirements. Parsons Brinckerhoff will adjust this horizon year at YMPD’s direction.

Environmental Overview: An environmental overview will be performed on the identified corridors to identify fatal flaws and uncover any environmental concerns related to biological (flat-tailed horned lizard) and cultural resources, 4(f) concerns, archaeology, hazardous materials and air quality. Coordination of the environmental activity will be administered with tribal, federal, Mexico SCT, SLRC and SUDR officials.

Corridor Evaluation: In conjunction with Tasks 4.1 and 4.2, the corridors will be examined to identify physical constraints, alignment challenges such as potential grade separation locations, excessive structure requirements, and challenging terrain / topography. Design criteria for the rail alignments will be coordinated with the UPRR.

Rail Operations: We will assess and consider existing rail lines such as the UPRR, Yuma Valley Railway along the Colorado River, and the Department of the Navy rail line along Avenue 3E and consider accommodations for access, staging, agricultural constraints, switching and interchanges.

Port of Entry: The Yuma region is no stranger to disruptions and traffic backups at the San Luis Port I, where nearly 50,000 people cross the border each day during the agricultural season. The Parsons Brinckerhoff team will obtain the security analysis results from the MAG Freight Transportation Framework Study and access available data from ADOT and the Yuma sector of the US Border Patrol for inclusion in the document.

Multimodal Logistics Center: The Parsons Brinckerhoff team will obtain multimodal logistics center results from the Arizona Multimodal Logistics Center Study as well as access available data from the CANAMEX Corridor Team, and ADOT MPD. Logistic opportunities such as the Maquiladora Industry, Foreign Trade Zones, and Regional Consumption Centers will also be obtained from the study. Based upon input from the TAC, the team will identify potential geographic locations for multimodal commodity ports in Yuma County.
Task 4 Deliverables

Task 4 will produce an “Alternative Analysis Report” inclusive of the topics below. These work items will be prepared separately and submitted to the partner agencies as technical memoranda.

- Upon review, revision and acceptance, the individual memoranda will form an “Alternative Analysis Report” with the following chapters:
  - Alternative Route Identification and Definition
  - Evaluation Criteria
  - Alternative Analysis
  - Preferred Corridor
  - Project briefing with the SRT and the TAC

Task 5: Economic Impact Analysis

To determine the economic impact and benefits of a rail line with an inland commodity port, the Parsons Brinckerhoff team will use results from the MAG Freight Transportation Framework Study as the baseline. We know that the baseline data from the MAG study will need to be refined to be Yuma specific. Assumptions on commodity splits will be developed and implemented to estimate the direct effects, indirect effects and induced effects on production activities.

We understand that the economic benefits will vary based upon whether or not the Punta Colonet port is implemented. We will be mindful of this and provide the statistics under two scenarios, one with a deep sea port at Punta Colonet and a second without.

A significant part of this study is to identify a corridor with the greatest potential for economic development, which the Parsons Brinckerhoff team will identify through a five-part process described below.

1. **Market demand.** An assessment of recent market trends for industrial, office and flex uses will be obtained from the MAG Freight Transportation Framework Study and used as the basis to develop adjusted estimates for incremental demand resulting from an inland commodity port development in the Yuma area.

2. **Catalyst locations.** Identify land areas that could be adjacent to the proposed corridor and existing businesses that could create an economic development node that offers more related business opportunities.

3. **Municipality goals.** Once land areas have been identified, it will be important to understand how new opportunities align and integrate with municipal policies. We will identify locations in areas with political momentum and desire for a range of rail-related economic development opportunities.

4. **Funding opportunities.** Estimates for supportable public investment in infrastructure, development incentives, etc. will be reviewed, and analyzed in the context of compatibility with the local jurisdictions’ ability to support inland port development and other potential enhancements.

5. **Economic benefits.** With the above criteria identified, our team will quantify and qualify the economic benefits associated with various short-term and long-term implementation strategies.

Identify Potential Funding Sources:

In evaluating a project such as the development of rail with an inland commodity port, it is important to assess a wide range of potential funding sources to give project sponsors a menu of available options to fund the project. The Parsons Brinckerhoff team will assess an array of funding options and quantify the contribution of each funding source to the project, as well as evaluate other risks or issues associated with each.

Traditional Sources

The Parsons Brinckerhoff team will investigate and summarize traditional, appropriated funding. Traditional funding at the federal, state, and local level is typically generated through taxes and fees and appropriated to states or specific projects. We will consider funding sources including Federal grant funding (e.g., TIGER Grants), Federal formula funding, and State-level DOT funding.

Other Innovative Methods

Traditional Sources may be insufficient to fund a project. When a shortfall remains, project sponsors must seek other opportunities to reduce shortfalls. Potential options for reducing shortfalls include state or local obligations to pay operating and maintenance costs, debt service guarantees, or other innovative methods such as value capture and foreign trade zones.
Private Sector Involvement

Recently adopted legislation in Arizona authorizes the use of Public-Private Partnerships (PPP) as a potential option for funding future infrastructure investments in the state. Soliciting private sector involvement through a long-term concession could potentially deliver transportation projects more quickly than relying solely on traditional public sector procurement. The private sector could provide the necessary capital funding to construct the project through a design-build procurement where design and construction activities occur simultaneously. Equity contributions would supplement fee-supported debt financing in the overall funding package and transfer risk to the private sector. Concession scenarios would have to assume a continuous revenue stream throughout the operating period, such as fees or an availability payment.

Any financial strategy relying on private sector participation must also be evaluated both from the project sponsor’s perspective and from the private sector investor’s perspective to ensure that the partnership would be mutually beneficial and financially viable. Parson Brinckerhoff’s understanding of the needs of both the public and private sector will allow for a complete summary of funding opportunities.

Task 5 Deliverables will include a summary of the following topics:
- Identification of the economic benefits of an inland port to the Yuma region
- Identification of current and future funding sources and mechanisms
- Project briefing with the SRT and the TAC

Task 6 - Prepare Final Report and Executive Summary

The objective of this task is to create a series of public documents that YMPO can utilize to move forward with implementation strategies. Task 6 will document the work and findings of the Yuma County Rail Corridor Study, including analysis from Task 3 and recommendations from Tasks 4 and 5. The full report will cover the following topics:
- A brief history of freight and transportation development in the Yuma area
- Summary of the scope of the project and goals
- The Yuma County Rail Corridor Improvement Recommendations and an Implementation Plan

As a companion to the final report, the Parsons Brinckerhoff team will produce an Executive Summary Poster, a stand-alone document that can easily be reproduced for distribution at meetings with businesses, media, civic institutions and other stakeholders. We will produce an information package, suitable for web posting, distribution at public meetings, and other civic forums. The public information package will contain:
- A “slimmed down” version of the executive summary in a poster format and written in a highly readable manner
- Key regional freight facts such as commodity flows, tonnage and value
- Exceptional findings
- Deficiencies and their impacts on freight flow and the regional economy
- Key recommendations for improving freight flow in the region

The outreach effort associated with this task is focused solely on developing and distributing a compelling product that has succinct text, is visually appealing with intuitive graphics, and a call to action. This will be available to all who have been involved in the study, along with additional parties that may need or benefit from the study findings.

Task 6 Deliverables will include the following:
- Yuma County Rail Study Final Report with Executive Summary (20 bound copies, one electronic file)
- Stand-alone Executive Summary (20 bound copies, one electronic file)
- Executive Summary Poster (200 printed copies, one electronic file)
- 20 DVD’s containing the final report, executive summary and executive summary poster
- Project briefings with the SRT and the TAC
- Public Involvement Summary
- Presentation to the YMPO Executive Board

Preliminary Schedule

The Tasks described in the above sections have been depicted in bar-chart format as required in the RFP in Figure 7 on Page 14. The schedule is based upon delivery of the final project in 12 months from the notice-to-proceed date. Flexibility is provided in the schedule in the event that pressures from outside sources (e.g., political) require that certain elements be delivered sooner than originally planned.
The key milestones are identified on the schedule as working paper deliverables that will document the results of each task. Monthly check-in meetings/teleconferences with the SRT will be conducted to discuss progress and the project schedule. Our experience indicates keeping the schedule at the forefront of discussions will increase the likelihood of meeting the delivery dates. Doug LaMont will work closely with YMPO Project Manager Charlene FitzGerald to ensure that all deliverable schedules are met.

**Figure 7 - Preliminary Schedule**

| Task 1: Refine Work Plan & Ongoing Project Management |  |
| Task 2: Establish Public Involvement Plan |  |
| Task 3: Current and Future Conditions |  |
| Task 3a: Inventory of Current Conditions |  |
| Task 3b: Forecast of Future Conditions and Deficiencies |  |
| Task 4: Alternative Analysis |  |
| Task 5: Economic Impact Analysis |  |
| Task 6: Final Report and Executive Summary |  |