

# SCOPE OF SERVICES CITY OF MARICOPA

## Track Design Services Related to the Amtrak Station Relocation

March 12, 2014

### **PROJECT DESCRIPTION AND UNDERSTANDING**

#### **Background:**

The City of Maricopa desires to relocate the existing Amtrak station from its current location near State Highway 347 to a new location approximately 1 mile west, alongside Garvey Avenue, as shown in conceptual plans prepared in 2011 by Mountain States Contracting. The City desires to mimic the arrangement in the concept plans as closely as possible. Key features of the concept plans, which we understand to have been approved by Union Pacific, include:

- A new siding approximately 3200' long to the north of the existing Union Pacific main lines (the siding length is variable, so long as it meets the UPRR and Amtrak minimum requirements)
- introducing compound curves and tangent sections into the UPRR main line to allow installation of crossovers and turnouts
- A left-hand Number 15 main line crossover west of the Vekol Wash bridge.
- A No. 15 left-hand turnout at the west end of the siding west of the left-hand crossover
- A right-hand No. 15 turnout at the east end of the siding
- Geometry for a passenger platform 1000' long (final length to be determined in conjunction with Amtrak), with the back of the platform located at the edge of the UPRR property. We understand complete platform design (i.e., precise geometry, platform structural design, platform drainage, lighting, etc.) is not desired as part of this project.
- Relocation of Garvey Avenue northward to allow for the platform and platform access. Relocation of Garvey Avenue would occur between the intersections of North Green Road and North Roosevelt Road, with no modifications to these intersections (Garvey Avenue would shift "around" the station platform). The length of relocation would be on the order of 1500' to 2000'. This would include a relocation of the intersection of the road leading to the new fire station. The final relocation limits will be established based on adoption of the preferred future Amtrak Station site plan and local roadway circulation and access plan.

### **TASK 1 – UNION PACIFIC AND AMTRAK COORDINATION**

#### **Support City's Railroad Coordinator**

Provide concept plans to the City's Railroad Coordinator for continuation of discussions with Union Pacific.

#### **Support City's Right of Entry (ROE) Application to Union Pacific**

We assume the City will obtain the Union Pacific ROE on behalf of City staff. RailPros or their subconsultants can obtain all necessary survey permits or rights of entry to perform borings on railroad property.

### **Develop Information Requests for Union Pacific**

Work with the City and the City's Railroad Coordinator to identify information UP may make available for references purposes (only) to accelerate the design process. Examples of this information include right-of-way mapping, culvert headwall designs (including hydraulic and hydrology studies), geotechnical borings at culverts, and signal line maps. Note that, if UPRR provides any information, it would likely be provided "as-is, un-warranted, with all defects, known and unknown."

### **Identify Construction Role for Union Pacific**

Identify the City's preferred role for Union Pacific in the construction process: will UP construct all track, or will UP construct only the track in the vicinity of the main line. It is anticipated plans will show City construction of track to the 13' clear point. All grading will be completed by City including switch construction pads.

### **Coordinate with Amtrak**

Assist the City in discussing platform configuration and station relocation with Amtrak. Verify Amtrak design criteria. Determine Amtrak and the Federal Railroad Administration's current standing on "level boarding" at the platform, which will affect platform height and, ultimately, the elevation of the back of the platform above Garvey Avenue. We believe this coordination will include up to two conference calls (or one meeting in Amtrak's Los Angeles office in lieu of a call). RailPros staff in the L.A. area would attend these meetings.

### **Develop Final Rail, Platform, and Future Amtrak Station Layout in Conjunction with the City**

Finalize the City's overall preferred rail, platform, and future Amtrak Station site layout, which will inform – and be informed by – the station configuration.

## **TASK 2 – FIELD DATA COLLECTION**

### **Field Survey**

This effort will gather topographic and top-of-rail survey information for the project.

One-Call (Blue Stake) will be notified for utilities marking. Union Pacific is not a member of the One-Call system, and they will need to mark their utilities separately. This can be accomplished after the right-of-entry has been established. One-Call markings and any Union Pacific markings will be surveyed.

Union Pacific has standards regarding the extent of field survey; for example, when new turnouts are being installed in the main line, UP requires that survey extends all the way around curves and beyond bridges in order to establish the incoming and outgoing track alignments and profiles for a project. This is impractical since the curve at Maricopa, while very broad (approximately 10 minutes), is nearly 5 miles long. Instead, we assume that survey would extend from 300' west of the bridge over Vekol Wash to a location east of the proposed siding where a projection of Wilson Avenue would intersect the tracks.

The survey area will be narrow west of Vekol Wash, extending only the width of the base of the railroad embankment.

East of Vekol Wash, the survey will be the full width of the railroad right-of-way (R/W) in order to capture terrain features for any track realignments in this area (where the existing alignment will be shifted southward to create tangent lengths for turnout installation). East of Vekol Wash the survey will also extend approximately 40' north of Garvey Avenue (measured perpendicularly from Garvey Avenue, since Garvey is on a northwest bearing). This will allow for a potential relocation of Garvey Avenue behind the proposed platform.

East of the theoretical intersection of Wilson Avenue and the tracks, survey only as wide as the top of the roadbed shoulders would be obtained as far east as the shunt boxes to indicate the location of the grade crossing equipment. This information will be required for Union Pacific to complete their signal design.

Top-of-Rail survey shots and topographic cross section will be taken at 25' intervals and at breaklines and other key points (eg, culvert headwalls and inverts, roadway curves, utilities, etc).

#### Key Understandings

- Survey will take several days in the UP R/W. It is assumed that up to 2 hours of “down time” per day may occur due to the need to clear the tracks and stop work for train movements.

#### **Geotechnical Investigation**

Perform geotechnical borings at 3 locations (one at each culvert location) to approximately 15 feet below ground surface, collect soil samples, and perform laboratory testing; we assume UPRR will require a geotechnical boring at each structure location.

The geotechnical borings would be followed by a geotechnical report sufficient for developing design for culverts, headwalls, track, roadway, and future use for platform design (a retaining wall may be required at the back of the platform at address elevation issues; this would be designed as part of a future project), characterization of on-site soils for re-use during construction, and earthwork issues (if any).

### **TASK 3 – 10% CONCEPTUAL DESIGN**

#### **10% Track Design Concept Design Verification**

10% Conceptual Design is one of the milestones for Union Pacific’s approval process.

Based on field survey, develop track horizontal alignment and vertical profile to verify Mountain States’ plans and incorporate spirals (as noted in Mountain States’ plan) to verify overall length and location of main line turnouts. Spirals (noted by Mountain States as “to be determined later”) and superelevation design will be added. Vertical profile will be based on culvert headroom considerations developed as part of this conceptual design effort. If possible, and if UP still has an active file documenting acceptance of Mountain State’s plan, his design will advance that effort and may be able to serve as the 30% submittal. Note, however, that track geometry is expected to change based on field survey and introduction of spirals.

A set of plans, separate from plans showing overall sitework, survey control data, roadway relocation, etc, would be provided for Union Pacific’s review. This submittal would address the elements included in Union Pacific’s submittal checklist and would be presented in a format familiar to UP. This separate set of plans describing work solely by Union Pacific would be continued throughout the design development process.

#### **10% Site Conceptual Design**

Develop concepts for the station platform design, including length, elevation above top of rail (i.e., determine whether “Level Boarding” provisions will apply), width, baggage equipment access, track edge configuration, back of platform elevation, ADA access, and space/width for canopies, if desired. This would be based upon the track concept, since the track is the least flexible design element and therefore the major design constraint. Begin to establish the platform’s effect on surface water drainage patterns.

Develop concepts for surface water/drainage design and likely maximum culvert requirements. The 10% effort will determine design flows to be used for the project. This will include obtaining and extracting flows from the Effective FIS study and from other constructed projects in the vicinity. If any other than the FEMA flows are used, justification will be required to support the decision.

Based on the design flows the flow depth and inundation limits and elevation will be determined for the existing condition. This will include modeling of the existing culverts and other structures in the vicinity

of the project. Preliminary elevations and sizes of structures will be developed aimed at minimizing any adverse effect from drainage on adjacent properties.

Develop conceptual Site Plans for the future overall Amtrak Station including site layout, zoning setbacks, station location and approximate footprint, associated parking, walkways and pedestrian connectivity, drop off zone/lanes, retention requirements, etc. Site Plan options will be affected by alternative Garvey Avenue realignment schemes and overall local roadway circulation and access configurations to complement the Amtrak Station as well as other properties in the vicinity.

To prepare the alternative Site Plans outlined above, a site visit will be performed to review existing conditions and a base sheet will be prepared utilizing an aerial photograph covering the proposed Amtrak Station vicinity. The aerial base map will be developed to show the location of existing roadway right of way or easements, pavement, curbs, sidewalks, utilities (and known easements), drainage facilities, walls, fences, utility poles, signs, trees, and natural features.

A programming level meeting, in conjunction with an initial site visit with the City, will be held with the City's project team and stakeholders agreed to with the City. Once refined, Site Plan exhibits of the alternatives will be developed such that they may be reviewed with Economic Development, Public Works, and the Mayor and Council.

We do not believe phasing will be necessary; neither the platform nor roadway are intended to be moved after their relocation.

Roadway relocation concepts would be based upon the overall geometry established during the conceptual drainage and platform design. These elements – in particular the platform design – will affect the location of the roadway.

Develop conceptual level cost estimate.

#### Key Understandings

- We understand that the City desires to maintain the platform in the approximate location shown on the concept plans. This design concept positions the back of the platform at the edge of the UP R/W, potentially occupying the drainage channel between the track and the roadway, and with a significant elevation difference between the top of platform and the roadway.
- Garvey Avenue would remain a 2-lane HMA roadway with drainage to the side on soft shoulders, and with no curbs or gutters. The only intersection modification would be for access to the new fire station.

## **TASK 4 – 30% DESIGN AND ENVIRONMENTAL DOCUMENTATION**

### **30% Track Design**

30% Design is a milestone for Union Pacific's approval process. This submittal will add information to the 10% design, and incorporate UP's comments on the 10% conceptual design. Because drainage is a critical issue, preliminary cross sections will be included (though UP generally does not review these until construction plans are submitted).

We assume that Union Pacific will allow use of their culvert plans (layout, reinforcing, etc), but will not provide structural calculations to the City. Our team will use the UP plans (likely a "standard" configuration) as a basis for our design and review the designs in preparation for developing sealed plans for headwalls. We would save budget by incorporating UP's standard plans into the plan set; we have not allowed budget to completely re-draw UP's standard plans.

### **30% Site Design**

Utilizing the selected/preferred future Amtrak Station Site Plan adopted by the City in TASK 3 above as a basis, the following project elements will be developed to a 30% design level:

Define Right-of-Way lines based on record information (this does not include an ALTA survey or Record of Survey).

Refine platform geometry. Incorporate comments from Amtrak.

Refine surface water/drainage design and confirm culvert dimensions.

Refine roadway relocation design, coordinate with platform design, and develop preliminary roadway cross sections, grading, and drainage.

Refine drainage report based on proposed infrastructure and determine potential adverse effects to adjacent property. Since the project impacts a FEMA floodplain, it is assumed that a floodplain use permit will be required from the County (the floodplain administrator). At the 30% design level, discussions would be initiated with the County to begin the process of obtaining a floodplain use permit. It is anticipated that the County will require the existing storage and conveyance conditions be maintained through the site, that the flow across the tracks be the same, and that the same amount or less ponding will occur upstream of the site.

Based on the City of Maricopa's, the County's, and the railroad's requirements the drainage scheme will be refined.

Identify utilities to be avoided or relocated; develop preliminary relocation plans that identify the preferred location for affected utilities (or a civil design that avoids them). It is assumed that the only utilities that might require relocation are overhead power lines or railroad signal cables and that final design for these relocations would be done by the facility owner.

This effort would establish the project footprint (Area of Potential Effect) for environmental documentation.

Develop 30% quantities and cost estimate for both trackwork and sitework.

Develop preliminary specifications. We assume that the City has basic technical specifications for sitework, grading, and roadway work available for modification. Our team can provide railroad trackwork specifications.

## **Environmental Documentation**

- Please see the scope provided by EcoPlan Associates, attached.

## **TASK 5 – 60% DESIGN**

### **60% Track Design**

60% Design is not a milestone in Union Pacific's process. No submittal is anticipated to UP, though additional development will occur on the grading, drainage, and cross sections to prepare for the subsequent submittals.

A preliminary railroad signal design concept would be included at this stage for review by the City.

### **60% Site Design**

At this level, it is assumed that platform geometry will have been finalized. The outline of the platform would continue to be shown in this and subsequent submittals as "not in contract."

Minor updates to Site Plan. This would be the last design level at which the site plan would be altered.

Incorporate the City's comments for surface water / drainage design and confirm culvert dimensions. Finalizing drainage will be the main component of the 60% effort in order to finalize the track elevations, identify stormwater routing, and identify grading requirements and the effect of placing the platform in the existing drainage channel (at this time, prior to topographic survey, it is assumed most surface water flows towards Vekol Wash).

Verify with the County the drainage plan to ensure the project meets the requirements for a floodplain use permit.

Incorporate the City's comments on roadway relocation design and advance roadway cross sections, grading, and drainage. Further develop roadway and site details and preferred utility locations for affected utilities. Develop temporary construction controls, including temporary traffic control and stormwater pollution prevention plans (for reference and modification by the contractor).

Develop 60% quantities and cost estimate for both trackwork and sitework.

Develop specifications. These are assumed to be limited to sitework, grading, and possibly railroad track specifications, with no specialty specifications (eg, mechanical, electrical).

#### Key Understandings

- We assume the project drainage will be covered by a floodplain use permit. The FEMA CLOMR/LOMR process is not included in the present scope. (Although a CLOMR/LOMR is not anticipated, the 60% design level presents an opportunity to verify this assumption. If a CLOMR/LOMR is needed, the application package can be initiated at this stage so that as soon as 100% plans are available the application could be sent to FEMA to start the review process.)

## **TASK 6 – 90% DESIGN**

### **90% Track Design**

90% Design is not a milestone in Union Pacific's process. No submittal is anticipated to UP, though additional development will occur on the grading, drainage, and cross sections to finalize them for the City's review prior to submitting them to Union Pacific at the Advertisement-Ready stage.

### **90% Site Design**

At this level, it is assumed that there would be no new elements to the design.

Incorporate the City's comments for surface water / drainage design and finalize grading/drainage plans.

Incorporate the City's comments on roadway relocation design and advance roadway cross sections, grading, and drainage. Develop roadway and site details and any utility relocation. Refine specifications and incorporate the City's boilerplate construction language.

Develop 90% quantities and cost estimate for both trackwork and sitework.

Finalize specifications.

## **TASK 7 – 100% DESIGN**

### **100% Design**

This is an intermediate step to allow the City to confirm that any of the City's comments on the 90% design have been incorporated. No new design elements are anticipated at this level.

Upon completion of 100% plans, it is assumed the City would submit them to the County as part of the floodplain use permit or Community Acknowledgement submittal.

## **TASK 8 – AD-READY DESIGN**

### **Ad-Ready Track Design**

Ad-Ready Design is a milestone in Union Pacific’s process. This submittal to UP will include the items identified on UP’s checklist, including drainage calculations, cross sections, and utility relocations on UP property.

Upon approval of the Ad-Ready drawings, a separate submittal will be prepared for UP’s “Exhibit A”, which would be incorporated into the construction and maintenance agreement between the City and UP.

### **Ad-Ready Site Design**

Develop PS&E ready for advertisement for the overall site design, including grading, roadway, utility, drainage, and any trackwork to be performed by the City’s contractor.

## **TASK 9 – PROJECT MANAGEMENT**

This task provides for managing the project, internal team coordination, and coordination with the City.

### **Meetings**

- Kick-off meeting (meet with City and City’s Railroad Coordinator)
- Bi-Weekly Conference Calls (conference call every other week with the City). Approximately 20 calls.
- Internal team coordination with subconsultants.
- RailPros will pursue Union Pacific’s “expedited” right of entry process. We have provided an allowance for this effort as an Direct Cost. We have allowed \$4000 for this permit. Actual costs (either under or over the estimated cost) would be billed to the City.
- RailPros will pursue railroad protective liability insurance coverage under UP’s “bulk” policy. Actual costs (either under or over the estimated cost) would be billed to the City. We have allowed \$10,000 for RRPL.
- RailPros would pay for UPRR flagmen under the Right of Entry permit. This cost is estimated at \$10,000 for 8 days of flagging (6 days for survey in the R/W, 1 day for geotechnical borings, and 1 day for environmental field reconnaissance). Actual costs (either under or over the estimated cost) would be billed to the City.

## **TASK 10 – DESIGN SUPPORT DURING CONSTRUCTION**

### **Design Support During Construction**

We assume that the City’s staff will perform procurement and construction management. This task provides design support during construction. We assume only the site civil improvements would be included, and that station improvements, such as the platform itself, the station building, parking lot, electrical, and lighting systems would not be constructed at this time. This current DSDC under this contract includes:

- Attending the pre-bid meeting
- Responding to up to 20 bidders' questions
- Attending the pre-construction meeting
- Reviewing a maximum of 20 submittals
- Respond to up to 15 RFI's

## **BUDGET**

Budget for the services above is \$399,815.

This includes subconsultant costs and estimated Direct Costs of approximately \$30,000 to account for the Union Pacific Right of Entry, Railroad Protective Liability Insurance, and Flagging. Note that these ODC's are estimates and we would expect to pass-on the actual costs to the City.





## **SCOPE OF WORK**

**City of Maricopa**  
**Track Design Services related to Amtrak Station Relocation**  
**Environmental Assessment Re- evaluation**  
**EcoPlan No. 13-01157**

### **Environmental Documentation**

Environmental documentation is based on federal process due to the federal nexus established by Federal Highway Administration (FHWA) related to the Arizona Department of Transportation (ADOT) SR 347 @ UPRR Grade Separation project. The SR347 project Draft Environmental Assessment (EA) is currently in review by FHWA. Approval of the draft is expected in April 2014 and approval of the Final EA and Finding of No Significant Impact (FONSI) is scheduled for July 2014 pending the outcome of the public hearing and review period.

For the purpose of scope development it is assumed an EA Re-Evaluation will be required based on design plans developed by the City of Maricopa and RailPros. The Re-Evaluation will be completed in an addendum style, addressing only those items that are subsequent to the project scope approved in the FONSI. The following technical studies / reports will be prepared to support the EA Re-Evaluation.

**Task 1. Project Management, Coordination and Meetings** – EcoPlan will coordinate with Rail Pros as primary contact on the project. EcoPlan will attend two project team meetings in Maricopa.

**Task 2. Public and Agency Scoping Letters** – EcoPlan will prepare scoping letters to affected agencies and adjacent properties (40 addresses) describing the Phase 1 project. Results of the scoping responses will be documented in the EA Re-Evaluation.

**Task 3. Environmental Assessment Re-Evaluation Document** – EcoPlan will prepare draft and final documents addressing the project elements of the Phase 1 Amtrak project. The Re-Evaluation document will be in standard ADOT/FHWA addendum style. This will include a description of the specific Phase 1 project details and updates to all chapters affected by the Phase 1 project, including any new mitigation measures.

**Task 4. Biological Resources** – EcoPlan will review the USFWS and AGFD data bases for protected species in the vicinity and prepare brief letter report or update the Biological Review Report prepared for the SR347 UPRR Grade Separation project. EcoPlan will coordinate with ADOT to determine their preference.

**Task 5. Cultural Resources** – EcoPlan will prepare a Consultation Initiation Form (CIF) meeting ADOT standards and draft Section 106 consultation letters. Based on current research and coordination with ADOT the project area has been fully surveyed, no additional survey is required.

**Task 6. Hazardous Materials** – The Preliminary Initial Site Assessment (PISA) prepared for the SR347 @ UPRR Grade Separation is in the process of an update by Ninyo and Moore through ADOT. The scheduled delivery is in April 2014. The update will include Garvey Avenue realignment and railroad siding. No additional work is anticipated for this project.

**Task 7. Clean Water Act** – EcoPlan will conduct a field review of the drainages to confirm no Waters of US are present and document for the city the lack of need for Section 404/401 permitting.

**Task 8. Noise Analysis** (prepared by Noise Expert Acoustical Consulting, sub to EcoPlan) – This document will follow ADOT/FHWA Noise Abatement Policy to consider impacts to sensitive noise receivers (residences) in the project vicinity.



## **Assumptions**

Assumptions used to generate this scope of work and the associated cost estimate are summarized below. Should additional services be required that are not described in this scope of work, EcoPlan will provide a supplemental scope and cost.

1. No new right-of-way or property acquisition will be required.
2. EcoPlan will be provided copies of all documents relative to the SR347 EA (EA, Noise Report, PISA, Biological Review Report, Air Quality Report, Cultural Survey Report and consultation letters, Design Concept Report)
3. EcoPlan will not need to provide a PISA; the work by ADOT (Ninyo and Moore) will meet project needs.
4. No asbestos or lead based paint testing will be required.
5. No Waters of the U.S. will be present and no jurisdictional delineation will be required.
6. No protected species surveys will be required.
7. No more than two rounds of document reviews will occur with ADOT/FHWA
8. No qualitative air quality analysis will be required