COUNCIL DECISION REQUEST

SUBJECT: Engineering Design for Expanding Echo Ramp at the Payson Airport

MEETING DATE: 7-19-12

SUBMITTED BY: LaRon Garrett, Asst. Town Mgr.

SUBMITTAL TO AGENDA
APPROVED BY TOWN MANAGER

AMOUNT BUDGETED: $210,000

EXPENDITURE REQUIRED: $58,136

EXHIBITS (If Applicable, To Be Attached): Copy of Attachment B

POSSIBLE MOTION

I move to approve Attachment 'C' to the Professional Services Agreement between The Town of Payson and Armstrong Consultants, Inc. to provide design services for the expansion of Echo Ramp at the Payson Airport for $58,136 and authorize the Mayor to sign all necessary documents.

SUMMARY OF THE BASIS FOR POSSIBLE MOTION:

In January, 2010 the Town entered into a multi-year agreement with Armstrong Consultants, Inc. to provide engineering design and construction management services for the Payson Airport. The various projects with a specific Scope of Services are attached to the standard agreement as funding becomes available. The funding for this project is from a Federal Aviation Administration Grant and a grant from the Arizona Department of Transportation (ADOT) Multimodal Planning Division. The FAA grant pays approximately 90% of the project costs, with ADOT paying approximately 5% and the Town paying approximately 5%. This grant is to design the expansion of Echo Ramp to provide additional aircraft parking space.

Armstrong has proposed to provide the required design services for the expansion of Echo Ramp at the Payson Airport for $58,136.00 per the attached Scope of Services.

PROS:

This design will allow us to construct the additional parking area with future grants.

CONS:

None.

FUNDING:

Acct: 260-5-4445-00-8813	Budget: $210,000	Available: 210,000	Expense: 58,136	Remaining: 151,864
Acct:	Budget:	Available:	Expense:	Remaining:
Acct:	Budget:	Available:	Expense:	Remaining:

FM: Hope Cribb Date: 10/8/13

OCT 17 2013 D.3.C*

TASK ORDER ATTACHMENT C
TO
PROFESSIONAL SERVICES AGREEMENT
BETWEEN OWNER AND ENGINEER,
DATED _____, 2013

FURTHER DESCRIPTION OF SERVICES OF ENGINEER

1. This Attachment is made a part of and incorporated by reference into the Professional Services Agreement made on January 21, 2010 between the **TOWN OF PAYSON, ARIZONA (Owner)** and **ARMSTRONG CONSULTANTS, INC., (Engineer)** providing for professional engineering services. The Services of Engineer as described in Section 1 of the Agreement are amended or supplemented as indicated below and the time periods for the performance of certain services are stipulated as indicated below.

2. **WORK PROGRAM** - Attached

3. **FEES** - The fee will be as noted below. (lump sum)

Project #1 – Expand Echo Apron (Approximately 5,150 sy)

Phase 1	Preliminary Design	$5,572
Phase 2	Engineering Phase	$26,870
Phase 3	Final Design	$12,494
Design Survey		$ 3,300
Geotechnical Design		$ 9,900
Engineering Total		**$58,136**

Any travel shall be reimbursable by ADOT only within the rules and costs in accordance with the State of Arizona Travel Policy. Monthly invoicing of the fee noted above will be based upon a percentage of the lump sum total fee.

OWNER:
TOWN OF PAYSON, ARIZONA

_____
Kenny Evans, Mayor

ENGINEER:
ARMSTRONG CONSULTANTS, INC.

_____
Dennis Corsi, President

SCOPE OF WORK
PAYSON AIRPORT
AIP # 3-04-0027-19-2013

PROJECT #1 EXPAND ECHO APRON (Approximately 5,150 sy)

There is currently very little space for the transient aircraft on Echo Apron where most transient aircraft park. Echo Apron is the closest apron to the restaurant, fuel FBO and provides the greatest potential for accommodating the transient aircraft. During the fire season, the firefighting traffic occupies much of the current apron space and aircraft tie downs. Therefore, there is a lack of aircraft parking area for transient aircraft. This expansion will add additional aircraft tie-downs as well as an additional taxiway connector to provide traffic flow from the apron on to Taxiway "A in the event that the Forest Service has the existing connector blocked.

1.1. The new apron will include eight (8) new tiedowns. The new apron will be designed per AC 150/5300-13A, Figure 4-1; the appropriate Taxiway Design Group (TDG) was established to be TDG-1.

1.2. The proposed apron pavement strength will be 40,000 pound SWG as noted on the ALP.

1.3. The apron construction will include clearing and grubbing, excavation/grading, drainage for affected areas and paving for the taxiway and connector taxiway. Rock excavation is likely. Drainage runoff will be collected and directed away from pavement areas by the surface grading and incorporation of an existing drainage pipe if possible. An edge drain system will not be installed. Seeding/mulching will be applied to disturbed areas. Erosion control measures will be installed on the shoulders of the newly graded pavement to assist with establishing and promoting seed growth. Any spoils or waste soils will be spread on airport property as directed by the Town.

1.4. The new pavement will be marked and Type I, gradation A glass beads applied.

Estimated Construction Cost (Element 1) is:	$510,000
Estimated Construction Period is:	45 days*

*The fee for the engineering services may be renegotiated if the contract construction period changes.

PHASE 1 - PRELIMINARY DESIGN

The preliminary design phase is intended to identify and evaluate alternatives to assure cost effective and practical solutions for the work items identified. The designer will complete its evaluation of alternatives through contacts with local authorities, field investigations and a practical design approach. The design will take advantage of local knowledge and experience and utilize expertise from recent construction projects to design a cost-effective project and ensure competitive construction bids. Cost efficiencies will be realized in a lower initial cost and in lower long-term maintenance costs.

Activities include:

1. Coordinate with the Owner, FAA and local users to minimize impacts in day-to-day operations. This will include meeting with the Owner to determine critical dates, the feasibility of the proposed work and establish the timing of the topographical surveying and geotechnical investigations. Various meetings during the design phase will also be conducted to review the progress of the design and discuss construction details, proposed time frame of the construction and special requirements of the project. It is anticipated that there will be one meeting with the Owner, ADOT-MPD Aeronautics Group and the FAA.

2. Prepare project scope of work and contract. This includes establishing the scope of work through meeting with the Owner, ADOT-MPD Aeronautics Group and the FAA. This also includes drafting the contract for work to be done by the Engineer for the Owner. Prepare preliminary cost estimates and schematic design for each element of the project.

3. Preparing requirements for the geotechnical investigations, for element 1, establishing the limits of the work area and scheduling time for testing to be completed are each part of this item. Field-testing will consist of sampling soil and verifying soil classification and strength.

    a. This task includes determining the type and amount of testing needed to adequately design all aspects of this project.

    b. The Scope will be prepared and submitted to subconsultants for determining proposed fees.

4. Preparing requirements for the design survey for all elements, establishing the limits of the work area and scheduling time for surveying to be completed are each part of this item.

    a. This task includes preparing the limits of work and time schedule for the topographical surveying for all projects.

    b. The Scope will be prepared and submitted to subconsultants for determining proposed fees.

5. Prepare an overall construction safety and phasing plan in order to maximize project constructability. The phasing plan will be submitted to the FAA for review and approval.

6. Determine aircraft usage through coordination with Owner, ADOT-MPD Aeronautics Group and the FAA.

7. Prepare Federal Grant Application. This task consists of preparing the federal grant application. The application will be completed prior to the design phase. Preparation of the application will include the following:

    a. Prepare Federal Form 424.

    b. Prepare Project Sketch to be included in FAA Grant Application.

    c. Prepare Program Narrative, discussing the purpose and need of the work and the method of accomplishment.

    d. Prepare Preliminary Estimate.

    e. Prepare the Sponsor's Certifications. This is to be included with the FAA Grant Application.

    f. Attach the current Grant Assurances.

    g. Prepare Categorical Exclusion form and submit to the FAA.

    The Engineer will submit the application to the Owner for approval and signatures.

PHASE 2 - ENGINEERING PHASE ACTIVITIES

1. Evaluate local conditions:

    a. Inventory local material suppliers, sources and capabilities.

    b. Evaluate drainage alternatives.

    c. Review electrical lighting layouts and determine system requirements.

2. Review and evaluate project layout.

    a. Verify existing ALP dimensions and data.

    b. Review alignments and additions and make recommendations to the Owner for concurrence.

3. Analyze topographic and site survey data, including establishment of project control points. Prepare the data for use with computer modeling. Included are the following separate tasks:

a. Input raw survey data into the computer program in order to sort data into company standard layers for efficient analysis.

b. Sort all data points by layers and description for computer modeling.

c. Prepare LDD network (surface model) of existing ground contours, pavement edges, electrical equipment, drainage features and other miscellaneous entities.

d. Generate three-dimensional contour model from TIN.

e. Prepare data for pavement profiles, grading and/or paving cross sections and drainage features.

4. Analyze pavement and soils testing data. The Engineer will analyze the data, consisting of the following tasks:

   a. Generate geotechnical conclusions

   b. Determine appropriate data for pavement design

   c. Input data for computer modeling with topographical survey data

   d. Prepare pavement data and soil information for incorporation within the contract documents.

5. Complete a soils investigation, soils report and provide recommendations including:

   a. Field Exploration
      i. Obtain five (5) soil borings in new apron expansion area.

   b. Laboratory Testing
      The following will be completed.

Test	Number of Tests
-200 sieve analysis	17 each
In place moisture density	15 each
Atterburgs	2 each
Swell/Consolidation	5 each
CBR & Proctors	2 each
Sulfates	2 each
.02mm gradations	2 each

6. Prepare 30% and 100% construction plan packages. Construction plans will be prepared depicting the new apron expansion and all work involved for Project 1- Expand Echo Apron. The following list of drawings will be used as a guideline. Drawings may be added or deleted during the design phase if required.

DESCRIPTION	Project 1

a	Cover sheet- project title, project/grant number, funding agencies, index to drawings, project key and vicinity maps	1 Sheet
b	Survey Control Map, Summary of Approximate Quantities, General Notes and Legends, where applicable	1 Sheet
c	Construction Safety and Phasing Plan- This plan will identify all phasing and construction and safety notes for the project. It will identify to the Contractor the sequencing of work.	2 Sheets
d	Apron Grading Plan	1 Sheet
e	Apron Elevation Plan	1 Sheets
f	Typical Sections and Details	1 Sheet
g	Drainage Details- covers drainage site details	1 Sheet
h	Marking Details	1 Sheet
I	Erosion Control Plan	1 Sheet
	TOTAL SHEET COUNT	10 Sheets

7. Prepare 30% and 100% contract document packages. The Engineer will prepare the contract documents including invitation for bids, instructions to bidders, proposal, equal employment opportunity clauses and applicable wage rates, construction contract agreement, performance bond, payment bond, general and special provisions. Preparation will include establishing the location for the bid opening and description of the work schedule. Contract documents will be prepared as early as possible during the design phase and submitted to the Owner, ADOT-MPD Aeronautics Group and the FAA.

8. Prepare 30% and 100% technical specification packages. The Engineer will assemble the technical specifications necessary for the intended work. Standard FAA specifications will be utilized where possible. Additional specifications will be prepared to address work items or material that is not covered by the FAA specifications.

   The standard specifications to be utilized may include the following items:

Item P-151	Clearing and Grubbing
Item P-152	Excavation and Embankment
Item P-154	Subbase Course
Item P-156	Temporary Air and Water Pollution, Soil Erosion & Siltation Control
Item P-208	Crushed Aggregate Base Course
Item P-401	Plan Mix Bituminous Pavements
Item P-602	Bituminous Prime Coat
Item P-603	Bituminous Tack Coat
Item P-620	Runway and Taxiway Painting
Item D-701	Pipe for Storm Sewers and Culverts

Item D-705	Pipe Underdrains for Airports
Item T-901/908	Seeding/Mulching

The added technical specifications may include but not be limited to the following items:

Item Special-1	Mobilization
Item Special-2	Removals
Item Special-6	Watering
Item Special-10	Aircraft Tiedowns

9. Prepare FAA pavement design. This task will consist of calculating the pavement sections and including the design data in the design report. Pavement strength will be calculated in accordance with the FAA Advisory Circular 150/5320-6E, *Airport Pavement Design and Evaluation*. The following effort will be completed under this task:

    a. Determine applicable design program (F805-FAA, R806-FAA, AASHTO, FAA-LED).

    b. Establish the frost protection method/review historic frost design.

    c. Evaluate interim and ultimate pavement strength.

    d. Select subbase and base course material.

    e. Calculate various pavement sections for asphalt pavement for the apron.

    f. Evaluate subexcavation, undercutting or chemical subgrade stabilization if necessary.

    g. Prepare FAA Pavement Design Form 5100 for pavement section.

10. Prepare drainage analysis and storm drainage design. This task will consist of verifying the storm drainage and/or subsurface drainage systems in accordance with the FAA Advisory Circular 150/5320-5C, *Airport Drainage*.

11. Prepare 30% and 100% engineer's design report packages. During the preparation of the construction plans and specifications, an engineer design report will be prepared. The report will include the summary of the project, pavement, drainage design, schedule and cost estimate for the completion of the project. The design report will follow the current FAA Airports guidance.

In the final design phase, the designer will provide well-defined construction requirements, with selected bid alternatives as appropriate to assure competitive construction bids. Construction schedules will be closely coordinated to assure the best possible weather conditions and the least possible interference with airport operations.

Activities include:

Final Design

1. Incorporate engineering phase design comments and respond as necessary to requests for additional information.

2. Calculate Estimated Quantities. The Engineer will calculate all necessary quantities for the various work items in each Element.

3. Prepare Estimate of Probable Construction Cost for each Element. Using the final quantities calculated following the completion of the plans and specifications, the Engineer will prepare the construction cost estimate. The estimate will be based on information obtained from previous projects, contractors, material suppliers and other databases available.

4. Coordinate schedules for construction. This task involves dividing the construction work into schedules to assure minimum disruption of the airport aircraft operations. This item will also identify continuous working times or other unusual conditions that could affect the Contractor's normal progress of the work.

5. Prepare and submit final plans and specifications. Copies will be submitted to the FAA, ADOT-MPD Aeronautics Group and Owner. A final set of plans, specifications and contract documents will be prepared which incorporates revisions, modifications and corrections determined during the review process.

6. Assist the Owner with the advertisement for bids, attend prebid conference at the airport, issue any addendums required and interpretation of the project requirements.

7. Attend and assist the Owner with the bid opening.

8. Prepare an abstract of bids and make recommendation for award.

9. Assist in award notification to successful bidder and notify and return bid bonds to the unsuccessful bidders.

10. Prepare Disadvantaged Business Enterprise (DBE) Plan.

    a. Update the Sponsor's DBE plan. A new DBE plan will be developed for the Sponsor as required by the FAA.
    b. A new DBE goal will be calculated to reflect the current project. Research the current State DOT certified DBE listings and area contractors to determine the availability of potential DBE contractors. Prepare preliminary construction estimates and establish the potential DBE work items.
    c. Finalize the DBE plan and goals for submittal to the FAA Civil Rights Office for approval.

11. Prepare and/or assist with necessary forms:
    a. Strategic Event Coordination Form
    b. Standard Form 271
    c. Standard Form 425

The schedule is anticipated to be as follows:

Consultant Contract Execution	Completed
Scope of Work Approval	August 7, 2013
Fees Approval	August 16, 2013
Start Design	August 16, 2013
Design Survey	August 30, 2013
Geotechnical Report	September 30, 2013
Submit 30% Design Review Set	October 14, 2013
Complete Design, Submit for 100% Review	December 30, 2013