



MEMORANDUM

TO: Winnebago County Board of Supervisors

FROM: Jim Schell, Airport Director

RE: Taxiway A Reconstruction – Capital Project Presentation

DATE: August 13, 2018

HISTORY

Taxiway A (“Alpha”) is the 50 foot-wide parallel taxiway to Runway 18/36, the primary runway at Wittman Regional Airport, configured in a north-south orientation. The taxiway parallels Runway 18/36 for the entire length of the runway and extends all the way to the terminal ramp area. The primary section of taxiway to be reconstructed with this project (6,900 feet) was built in 1967 using 10-inches of concrete and 9-inches of sub base material. The southernmost 1,300 feet of the taxiway was added in 1988 and it is in better condition but is being evaluated for rehabilitation with this project.

Taxiway A, in addition to serving as the full parallel taxiway to the Airport’s primary runway, also serves a critical role for the annual EAA AirVenture fly-in and convention. Each year, during the convention, 6,300 feet of Taxiway A are transformed into Runway 18L/36R, a parallel runway to 18/36. This allows the Airport to be reconfigured with three, non-intersecting runways, allowing aircraft arrival and departure rates crucial to the success of the event.

An inspection of airport pavements in 2015 commissioned by the WI DOT Bureau of Aeronautics (BOA) noted that the Pavement Condition Index (PCI) (scale of 0-100) for the primary portion of Taxiway A to be reconstructed was a 64. During the study, forecasting is completed for what the PCI levels of all pavements will be up to ten years after the date of the study. The primary portion of Taxiway A to be reconstructed (6,900 feet) is projected to fall to a PCI of 61 in 2020 and a 60 in 2021. A PCI of 60 is considered the minimum service level, or in other words, the point at which the pavement should be reconstructed. Copies of pertinent pages from the 2015 Pavement Management Report are include after this narrative.

PROJECT PLANS

The primary goal of the Taxiway A project is to reconstruct or rehabilitate 8,200 linear feet of the taxiway in its current layout, with the addition of 5 foot wide asphalt shoulders on either side of the taxiway.

1. The enhanced width for Taxiway A, accomplished through the addition of 5 ft paved shoulders, will enhance safety for the aircraft using the taxiway year round and also during AirVenture when the taxiway becomes Runway 18L/36R.

2. Current incandescent taxiway edge lights will be replaced by new LED taxiway edge lighting and fixtures. This upgrade will improve reliability of the lighting system in this area and contribute to lower airfield operating costs associated with electrical consumption and bulb replacement.
3. Storm water drainage will be improved by re-contouring the landscape, particularly in the turf areas between Taxiway A and Runway 18/36. The project plans to replace two 30 year old deteriorating corrugated metal culverts that cross underneath TWY A, with concrete culverts to improve water flow and extend the life of the drainage structures. These improvements will be coordinated with the City of Oshkosh as they have major flooding issues in this area which affect areas on the southeast side of the Airport and extend off Airport as well. The design team will evaluate any other drainage improvements that benefit all parties and could potentially reduce the storm water fees assessed to the Airport, lowering its annual operating budget.
4. Five taxiway connectors (A2-A6) between the taxiway and runway will be reconstructed as well.

Please refer to the enclosed diagram, which visually depicts the scope of the taxiway reconstruction project, outlining those areas on the taxiway in red.

TIMETABLE

If funding is obtained by all parties (Winnebago County, Federal Aviation Administration (FAA) Airport Improvement Program (AIP) and Wisconsin Department of Transportation (DOT) Bureau of Aeronautics (BOA), the project will begin with the design phase in late 2018.

FUNDING

The taxiway reconstruction project, in total, is currently estimated to cost \$10.5 million. This is a rough cost estimate and will be further refined as part of the design process.

It is anticipated, as with past projects of similar scope, that construction of this project will be split into 2 separate phases due to FAA funding availability. As with our previous major pavement replacement projects, with county board concurrence/approval we intend to use the following funding sources and percentages for **Phase I** of this project:

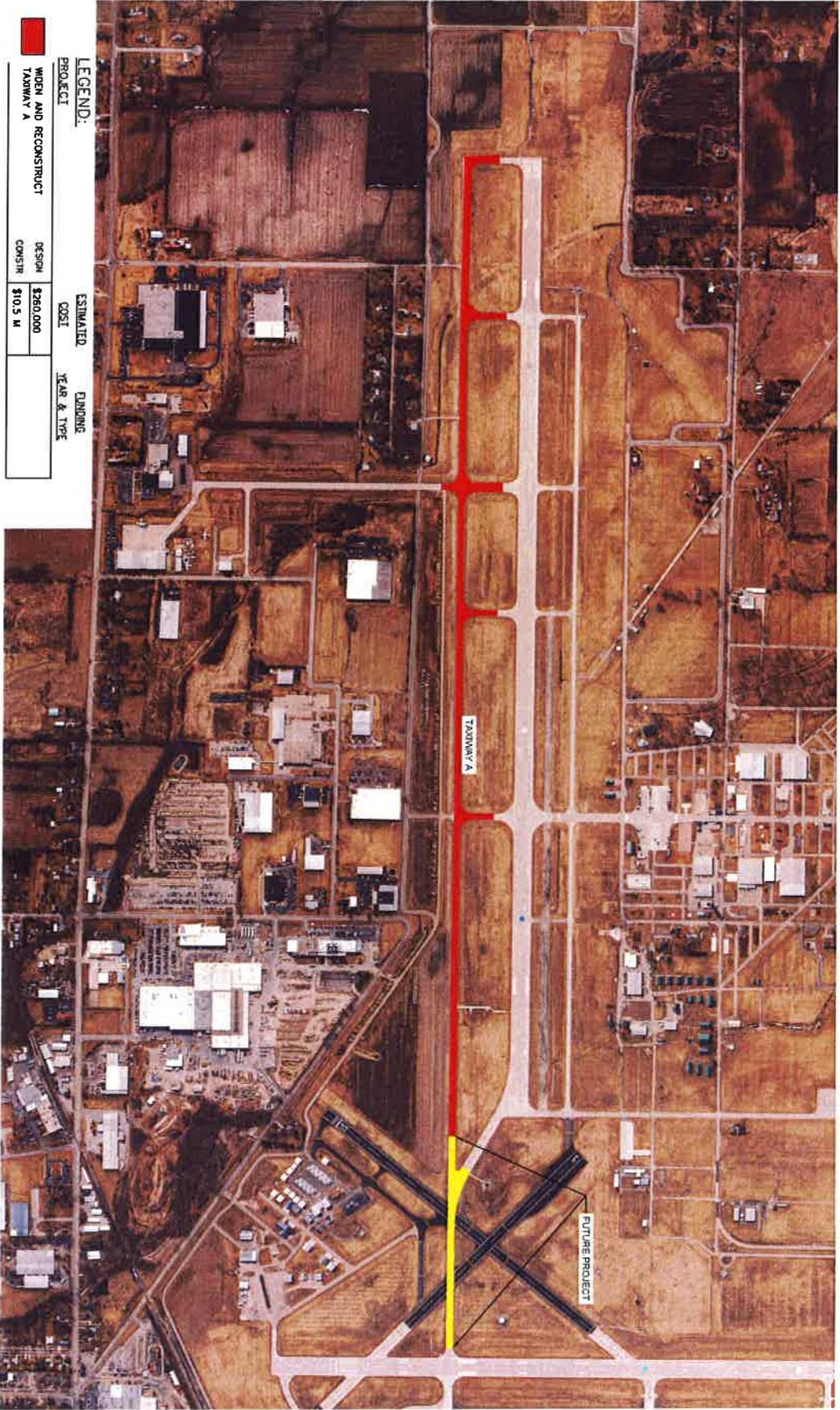
FAA Airport Improvement Program (AIP) (90%)	\$5,400,000.00 (Current available FAA funds)
WI DOT BOA (5%)	\$ 300,000.00
Winnebago County municipal bonding (5%)	<u>\$ 300,000.00</u>
	\$6,000,000.00 (Construction Funding – <u>Phase I</u>)

Design work necessary to begin this project is programmed for the following funding sources and percentages:

FAA Airport Improvement Program (AIP) (90%)	\$270,000.00
WI DOT BOA (5%)	\$ 15,000.00
Winnebago County municipal bonding (5%)	<u>\$ 15,000.00</u>
	\$300,000.00 (Design Funding)

The resolution being brought forward to the County Board for funding at the September 18th meeting is solely to secure the funds required to begin the design work on the project, the County’s share of \$15,000.

WITTMAN REGIONAL AIRPORT



LEGEND:

█	PROJECT	ESTIMATED COST	LANDING YEAR & TYPE
█	WIDEN AND RECONSTRUCT TAXIWAY A	DESIGN \$260,000 CONSTR. \$10.5 M	

PROJECT NO:	
DRAWN BY: MEF	
DATE: 06/18/2018	
SHEET: 1 OF 1	

WITTMAN REGIONAL AIRPORT
2018 GRANT DRAWING

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medium-severity alligator cracking, and medium-severity L&T cracking were also observed. The medium-severity alligator cracking was identified along the edge of the pavement and may have been caused by loadings other than those associated with aircraft traffic.

Sections 20 and 30 had PCIs of 79. Moderate quantities of sealed, low-severity L&T cracking, along with much smaller amounts of medium-severity L&T cracking were identified throughout both sections. Medium-severity L&T cracking was recorded where secondary cracking had developed.

Section 40, a PCC-surfaced pavement located at the approach end of Runway 13, had a PCI of 91. Medium- and high-severity joint spalling was observed. Low- and medium-severity joint seal damage were also observed.

Runway 18-36

Runway 18-36 was defined by four sections. The center 50 ft portion of the runway is separated from the outside 50 ft wings of the runway as is typical for large runways where variations in traffic use may be significant.

Section 10C was in excellent condition with a PCI of 98. Low-severity corner spalling and joint spalling were observed. Joint sealant was in generally good condition with a very small amount of sliver spalling observed along the longitudinal joints.

Section 10W had a PCI of 97. Similar distresses to those recorded in section 10C were observed; however, medium-severity corner spalling and joint spalling were recorded.

Sections 20C and 20W both had a PCI of 92. In general, the joint sealant was in slightly worse condition than the previous sections with a moderate degree of visible openings or oxidized sealant. Low-severity faulting was observed in a few instances in both sections. Additionally, low-severity corner spalling and medium-severity small patching were identified in Section 20W.

Taxiways

Taxiway A

Taxiway A runs parallel to Runway 18-36 and consisted of five sections.

Section 10 had a PCI of 78. High-severity joint seal damage, medium-severity joint spalling, low-severity small patches, and medium-severity small patching were observed in significant quantities. Smaller quantities of shrinkage cracking were also observed.

Section 15 was scheduled to be rehabilitated in 2016, after the pavement inspection. It is assumed that the PCI will be 100 upon completion of the pavement work.

Section 20 had a PCI of 92. Low- and medium-severity joint seal damage were the primary distresses recorded in this section. An area of high-severity joint spalling was also inspected as an additional sample unit, according to PCI procedure.

Section 30 had a PCI of 64. Several distresses including low-, medium, and high-severity corner spalling; high-severity joint seal damage; low-, medium-, and high-severity joint spalling; and low-severity small patching were observed in significant quantities. Other distresses including

low-severity D-cracking, medium- and high-severity small patching, and medium-severity large patching were recorded in lesser quantities.

Section 40 had a PCI of 82. High-severity joint seal damage was the predominate distress observed. Small amounts of low- and medium-severity corner spalling; low- and medium-severity joint spalling; medium-severity longitudinal, transverse, and diagonal (LTD) cracking; and low-, medium-, and high-severity small patching were also identified.

Taxiway A1

Taxiway A1 was defined by two sections.

Section 10 had a PCI of 80. Several distresses were observed including low-severity small patching and low- and medium-severity joint spalling. A high-severity corner spall, a high-severity joint spall, and high-severity joint seal damage were also recorded. The majority of the joint sealant had deteriorated significantly or was missing.

Section 20 was in excellent condition with a PCI of 97. Low- and medium-severity were observed.

Taxiway A2

Taxiway A2 was defined by two sections.

Section 10 had a PCI of 53. Significant amounts of low- and high-severity joint spalling, high-severity corner spalling, and medium-severity LTD cracking were recorded. Isolated amounts of low- and medium blow-ups, low-severity D-cracking, low-severity LTD cracking, and high-severity patches were also recorded. The high-severity corner spalling and high-severity joint spalling was observed to be producing an FOD potential. Additionally, high-severity joint damage was identified where joint sealant had deteriorated significantly.

Section 20 was in excellent condition with a PCI of 98. Low-severity joint seal damage was the only distress observed.

Taxiway A3

Taxiway A3 consisted of two sections.

Section 10 had a PCI of 60. Several distresses including high-severity joint seal damage, high-severity joint spalling, and medium-severity LTD cracking were observed in significant quantities. Other distresses including low- and high-severity corner spalling, low- and medium-severity joint spalling, low-severity LTD cracking, and medium-severity small patches were also observed.

Section 20 was in excellent condition with a PCI of 98. Low-severity joint seal damage was the only distress observed.

Taxiways A4

Taxiway A4 was defined by two sections.

Section 10 had a PCI of 73. Low- and medium-severity LTD cracking, along with medium-severity joint spalling, were the primary distresses observed. Smaller quantities of medium-

Table 2. Pavement evaluation results (continued).

Branch ¹	Section ¹	Surface Type ²	Section Area, sf	LCD ³	2015 PCI	% Distress due to:			Distress Types Present ⁶
						Load ⁴	Climate or Durability ⁵	Other	
TWA1WI	10	PCC	44,332	6/2/1967	80	0	52	48	Corner Spalling, Joint Seal Damage, Joint Spalling, Small Patching
	20	PCC	40,276	6/13/2010	97	0	100	0	Joint Seal Damage
TWA2WI	10	PCC	17,088	6/2/1967	53	21	44	35	Blow-Up, Corner Spalling, D-Cracking, Joint Seal Damage, Joint Spalling, LTD Cracking, Small Patching
	20	PCC	16,491	6/13/2010	98	0	100	0	Joint Seal Damage
TWA3WI	10	PCC	18,009	6/2/1967	60	43	22	35	Corner Spalling, Joint Seal Damage, Joint Spalling, LTD Cracking, Small Patching
	20	PCC	12,130	6/13/2010	98	0	100	0	Joint Seal Damage
TWA4WI	10	PCC	24,543	6/2/1993	73	40	41	19	Corner Spalling, Joint Seal Damage, Joint Spalling, LTD Cracking
	20	PCC	17,792	7/13/2009	95	0	100	0	Joint Seal Damage
TWA5WI	10	PCC	15,148	6/2/1967	76	18	37	45	Corner Spalling, Joint Seal Damage, Joint Spalling, LTD Cracking, Small Patching
	20	PCC	13,185	7/13/2009	94	0	87	13	Corner Spalling, Joint Seal Damage
TWA5WI	10	PCC	4,500	6/2/1967	78	0	48	52	Joint Seal Damage, Joint Spalling, Shrinkage Cracking, Small Patching
	15	PCC	52,432	6/3/2016	100	0	0	0	No Distresses
TWA5WI	20	PCC	13,524	6/2/2007	92	0	73	27	Joint Seal Damage, Joint Spalling
	30	PCC	426,519	6/2/1967	64	5	30	65	Corner Spalling, D-Cracking, Joint Seal Damage, Joint Spalling, Large Patching, LTD Cracking, Small Patching
TWB2WI	40	PCC	94,008	6/2/1988	82	14	55	31	Corner Spalling, Joint Seal Damage, Joint Spalling, LTD Cracking, Small Patching
	10	PCC	18,465	6/3/2016	100	0	0	0	No Distresses
20	PCC	10,754	6/3/2007	93	0	100	0	Joint Seal Damage	