# FINAL ENVIRONMENTAL ASSESSMENT VOLUME II

## Replacement Passenger Terminal and Enabling Projects

Des Moines International Airport Des Moines, Iowa

Prepared for

Des Moines Airport Authority And U.S. Department of Transportation Federal Aviation Administration

As lead Federal Agency pursuant to the National Environmental Policy Act of 1969

Prepared by:

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## June 2019

This Environmental Assessment becomes a Federal document when evaluated, signed and dated by the Responsible Federal Official.

**Responsible Federal Official** 

Date

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<u>APPENDIX E</u>

SURFACE TRAFFIC

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# DES MOINES INTERNATIONAL AIRPORT TERMINAL PROGRAMMING STUDY

Traffic and Safety Report

October 2017

#### **Professional Engineer Signature Page**

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer. Date: 10/18/2017 m 12 41 Jared R. Miller, PE, PTOE, Env SP License No: 22769 My renewal date is December 31, 2018. Pages or sheets covered by this seal: All CITY OF DES MOINES APPROVED BY TRAFFIC AND TRANSPORTATION DIVISION Signature Date

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#### **Executive Summary**

Des Moines International Airport Terminal Programming Study included the completion of a Traffic Impact Analysis Study to assess the future traffic demand generated by additional airport gates, increased and relocated parking, relocation of the main airport entrance, and general population growth.

The safety, multimodal, and traffic operations analysis showed the need for improvements along Fleur Drive in the 2040 conditions, both with and without a new airport terminal. The following improvements are recommended for the future (2040) conditions, pending discussions between the airport and city as well as outcomes from the City of Des Moines transportation master plan:

- Synchronizing the cycle lengths would improve the corridor operations in the future years (2020 and 2040) for all options.
- Adding dual left turn bays to the westbound left and southbound left at Fleur and Army Post Road allows for the overall intersection to operate acceptably in all peak hours in 2040. This would be needed with or without the proposed airport terminal expansion.
- Providing sidewalks along Fleur on both the east and west sides of the road from Army Post Road to north of Porter Avenue should be evaluated as a potential pedestrian improvement.
- For the new Highview / Cowles / Fleur intersection, only a single northbound left and single southbound right are needed inbound into the Airport while maintaining the current configuration of the rest of the intersection. If pedestrian access is desired along the north side or west side of the intersection, the southbound right should be signal controlled instead of free-flow as was originally proposed. The existing outbound configuration (dedicated eastbound left, shared eastbound left / through, and dedicated eastbound right) is expected to remain operating at LOS D or better through 2040. No changes are recommended to other movements.
- Improving Fleur to six lanes from Army Post Road to at least McKinley Avenue would improve the traffic operations of the corridor, but would likely necessitate the closure of side roads to maintain safety. This improvement is not being recommended in the near term, but closing the side road access is the only solution capable of producing acceptable level of service at all the unsignalized intersections. However, due to the public impact, the City of Des Moines may decide this is not a tenable solution.

**Figure I-1** on the next page shows the proposed roadway configuration for Fleur and Cowles/Highview. **Appendix C** shows the full set of preliminary design plans.

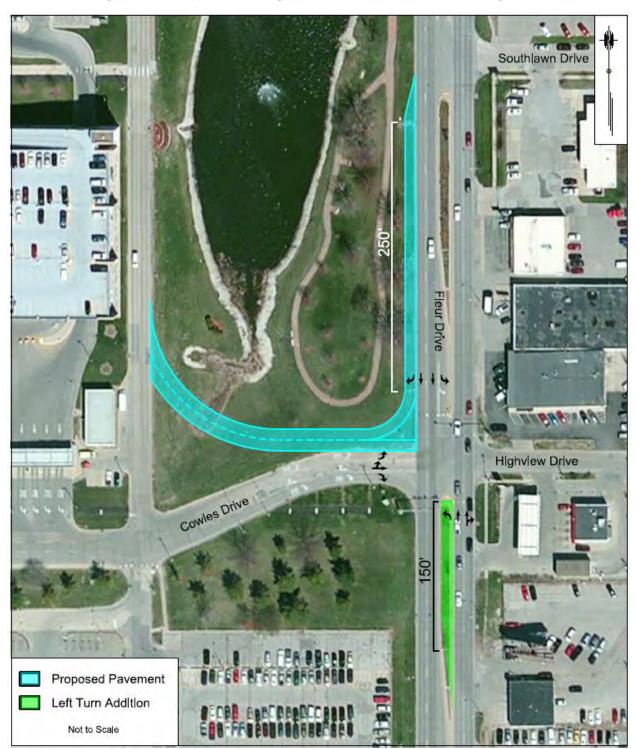
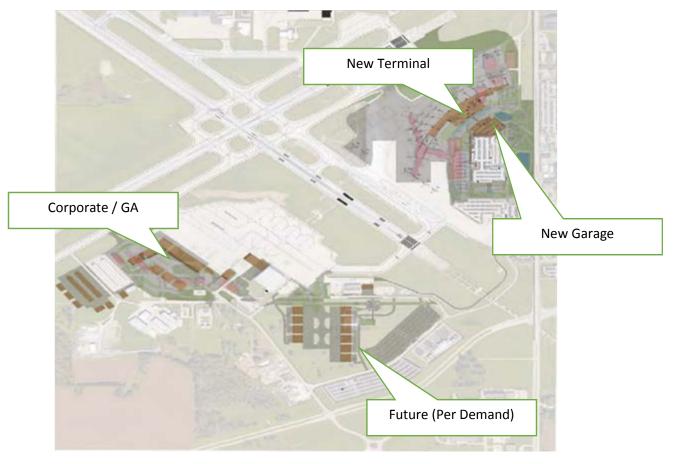


Figure I-1. Proposed Configuration of Fleur and Cowles/Highview

#### **1.0 INTRODUCTION**

The Des Moines International Airport Terminal Programming Study developed from the planned addition of a new airport terminal east of the existing terminal, adding 14 gates to Des Moines International Airport (DSM), with long term expansion to 18 gates. A traffic impact study was completed to assess the future traffic demand generated by additional airport gates, increased and relocated parking, relocation of the main airport entrance, and general population growth.

The traffic analysis includes Fleur Drive from the main airport entrance at Cowles Drive, south to Army Post Road. The intersection of Army Post Road and SW 28<sup>th</sup> Street was also analyzed due to proximity to DSM's economy parking lot (**Figure 1**). The dark blue shading below is future expansion outside the scope of this current study.



#### Figure 1. East Terminal Plan and Roadway Network

The study includes a Synchro and SimTraffic analysis of intersections on Fleur Drive and Army Post Road (**Figure 2**), a roadway and intersection safety and operations analysis, and an inventory of existing and proposed bicycle, pedestrian, and transit accommodations. Recommendations concerning roadway geometry and traffic control are provided.

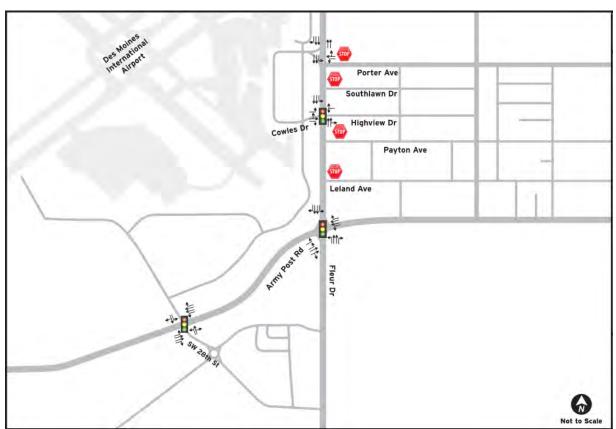


Figure 2: Study Area Intersections

#### 2.0 BASES OF ANALYSES

#### **Traffic Operations**

A traffic operations analysis was conducted using methods from the Highway Capacity Manual (HCM), Sixth Edition. The fundamental HCM parameter describing operational quality is level of service (LOS), with an 'A' (best) through 'F' (worst) ranking scale. For this study, a minimum of LOS D is considered the preferred or desired LOS for intersections.

Intersection LOS is based on the average control delay per entering vehicle and intersection type (signalized or unsignalized). Control delay not only includes stops at intersections, but also slower speeds as vehicles advance in queue or decelerate upstream of an intersection. **Table 1** shows the LOS ranges used to evaluate signalized and unsignalized intersections for this study.

	Signalized Intersection Average Delay (seconds/vehicle)	Unsignalized Intersection Average Delay (seconds/vehicle)
LOS A	≤ 10	≤ 10
LOS B	> 10-20	> 10-15
LOS C	> 20-35	> 15-25
LOS D	> 35-55	> 25-35
LOS E	> 55-80	> 35-50
LOS F	> 80	> 50

#### Table 1. Level of Service Thresholds

#### Model Calibration

Intersection turning movement volumes for the study area were provided by the City of Des Moines (City) for March 2017 and used to determine AM, midday, and PM Peak hours. Miovision traffic videos were also provided to the City and were used in the calibration process to provide a sense of traffic flow throughout the corridor. The project team received input from the City regarding existing traffic volumes and drove the study corridor to ensure accurate modeling.

Trafficware's SimTraffic microsimulation model was used to analyze the LOS of intersections in the study area. SimTraffic was the preferred analysis method due to the close spacing of intersections on Fleur Drive and the greater reliability of SimTraffic to simulate these real-world conditions. SimTraffic provides queueing information for each movement at each intersection, allowing a comparison of existing and future traffic queues compared to existing roadway storage lengths. Results of the queue analysis, reporting 95<sup>th</sup> percentile queues, can be found in **Appendices B-2 and B-3**.

#### Crash Analysis

Crash data was obtained from the Iowa Department of Transportation (Iowa DOT) for years 2011 to 2015 to perform an analysis of crash frequency, type, and severity within the study area. ArcGIS was used to map crash locations and analyze each arterial segment and intersection within the study area. Crash rates for arterial roadway segments and intersections were calculated per hundred million vehicle miles traveled (HMVMT).

#### Multimodal Network Analysis

A review of the existing and planned multimodal network conditions within the study area was performed to review the mobility conditions of bicyclists, pedestrians, transit, and automobile users. The review included an inventory of existing sidewalk and bike lane locations and a review of the City's Bicycle and Trail Master Plan, Comprehensive Plan, and Capital Improvements Plan. Projects outlined in these plans pertaining to the multimodal network within the project study area are noted in Section 5.0.

#### **3.0 TRAFFIC ANALYSIS**

Traffic operational analyses were performed at seven existing intersections on Fleur Drive and Army Post Road, shown in **Appendix B**. Intersection levels of service (LOS) for the AM, Midday, and PM peak hours were measured with Synchro/SimTraffic software (version 9) using HCM, Sixth Edition methods.

#### 3.1 Existing Traffic

Existing March 2017 traffic volumes were provided by Miovision, a traffic data collection firm, and used to identify the following three peak hours:

- 1. AM Peak Hour (7:15 am-8:15 am)
- 2. Midday Peak Hour (2:00 pm-3:00 pm)
- 3. PM Peak Hour (4:30 pm-5:30 pm)

Of the seven intersections analyzed, three intersections are signal controlled. These intersections include: Fleur Drive and Highview Road, Fleur Drive and Army Post Road, and Army Post Road and Southwest 28<sup>th</sup> Street. Existing signal timing and phasing plans were supplied by the City and used in the existing analysis. Existing peak hour traffic volumes are shown in **Appendix B-4**.

**Table 2** provides the overall intersection LOS for the three peak time periods in the Existing scenario. The City considers LOS A-D to be of acceptable performance, and LOS E-F to be unacceptable LOS performance.

	Existing AM Midday Stop Control Overall LOS Overall LOS				
Flour and Courles/Porter	Lincignalized	(sec/veh)	(sec/veh)	(sec/veh)	
Fleur and Cowles/Porter	Unsignalized	F (80.1)	F (72.7)	F (87.7)	
Fleur and Southlawn	Unsignalized	B (12.1)	A (6.0)	F (59.6)	
Fleur and Highview	Signalized	A (4.4)	A (7.1)	B (10.3)	
Fleur and Payton	Unsignalized	C (18.4)	C (18.4)	D (30.4)	
Fleur and Leland	Unsignalized	D (27.9)	C (21.1)	F (51.1)	
Fleur and Army Post	Signalized	C (32.6)	B (18.6)	C (21.4)	
Army Post and SW 28 <sup>th</sup>	Signalized	A (5.0)	A (4.8)	A (6.8)	

#### Table 2. Existing Overall Intersection Performance

\*LOS of unsignalized intersections is based on the worst movement

The intersection experiencing the worst LOS is Fleur Drive and Cowles Drive, the main entrance to Des Moines Airport Concourses A through C and short-term parking. Congestion occurs in each of the three peak hour time periods. Existing LOS results are graphically shown in **Appendices A-1 through A-3**.

#### 3.2 Future No-Build Traffic

A Future No-Build traffic analysis was performed by forecasting the existing traffic volumes to years 2020 and 2040 using growth factors ranging from 0.5 percent to approximately 5 percent based on intersection location. The no-build analysis assumes that a new airport terminal will not be constructed. Traffic redistribution is based on new parking lot locations identified in the Des Moines Airport Master Plan.

**Table 3** provides the overall intersection LOS for the three peak time periods in the 2020 Future No-Build scenario.

		FNB AM	FNB Midday	FNB PM
	Stop Control	Overall LOS (sec/veh)	Overall LOS (sec/veh)	Overall LOS (sec/veh)
Fleur and Cowles/Porter	Unsignalized	F (>120)	F (>120)	F (>120)
Fleur and Southlawn	Unsignalized	F (52.1)	C (15.3)	D (30.0)
Fleur and Highview	Signalized	A (4.7)	A (6.7)	A (9.5)
Fleur and Payton	Unsignalized	F (52.1)	B (13.1)	D (26.0)
Fleur and Leland	Unsignalized	E (38.0)	C (19.3)	E (49.5)
Fleur and Army Post	Signalized	D (41.2)	B (18.8)	C (24.6)
Army Post and SW 28 <sup>th</sup>	Signalized	A (5.5)	A (7.0)	B (10.4)

#### Table 3. 2020 Future No-Build Overall Intersection Performance

\*LOS of unsignalized intersections is based on the worst movement

Of the signalized intersections in **Table 3**, the intersection of Fleur Drive and Army Post Road experiences the worst LOS in all three peak periods, but has not surpassed the acceptable LOS threshold (LOS D). Of the unsignalized intersections, Fleur Drive and Cowles Drive operates the worst, with LOS F seen in all three peak periods.

HCM methodology requires the LOS of unsignalized intersections to be determined by the delay of the worst turning movement. The unsignalized intersections in this analysis perform at a lower LOS due to left turning movements onto Fleur Drive which experience the greatest delay and affect the overall intersection LOS.

**Table 4** provides the overall intersection LOS for the three peak time periods in the 2040 FutureNo-Build scenario.

		FNB AM	FNB Midday	FNB PM
	Stop Control	Overall LOS (sec/veh)	Overall LOS (sec/veh)	Overall LOS (sec/veh)
Fleur and Cowles/Porter	Unsignalized	F (>120)	F (>120)	F (>120)
Fleur and Southlawn	Unsignalized	F (>120)	A (9.9)	F (113.1)
Fleur and Highview	Signalized	B (10.1)	A (7.7)	B (12.3)
Fleur and Payton	Unsignalized	F (>120)	C (18.9)	F (61.5)
Fleur and Leland	Unsignalized	F (>120)	E (43.8)	F (>120)
Fleur and Army Post	Signalized	F (87.5)	C (25.4)	C (30.3)
Army Post and SW 28 <sup>th</sup>	Signalized	A (6.3)	A (8.3)	B (11.7)

#### Table 4. 2040 Future No-Build Overall Intersection Performance

\*LOS of unsignalized intersections is based on the worst movement

Of the signalized intersections in **Table 4**, the intersection of Fleur Drive and Army Post Road experiences the worst LOS in all three peak periods, and has surpassed the acceptable LOS threshold (LOS D) in the AM peak period. All unsignalized intersections experience LOS F in at least two of the three peak hours. Future No-Build LOS results are graphically shown in **Appendices A-4 through A-9**.

#### 3.3 Future Build Traffic

The Future Build traffic analysis assumes the main entrance and exit to the DSM is relocated from the existing location at Fleur Drive and Cowles/Porter Drive south approximately 0.2 miles to Cowles Drive and Highview Drive. This change in roadway configuration removes the southbound-right and northbound-left movements at Fleur Drive and Cowles/Porter Drive and adds westbound movements for both southbound and northbound traffic to the intersection of Cowles Drive and Highview Drive (**Figure 3**).

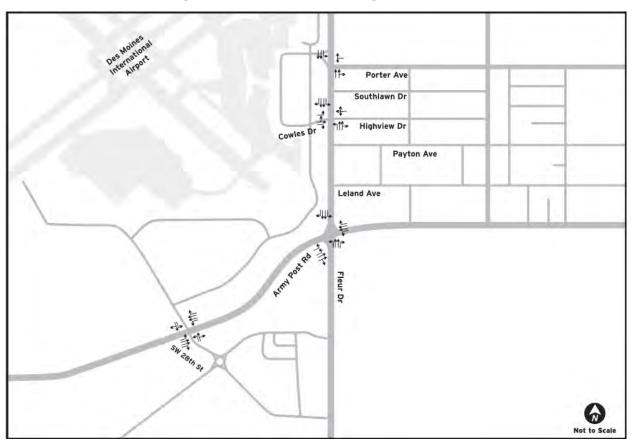


Figure 3. Future Build Turning Movements

The Future Build traffic analysis also assumes the construction of a new airport terminal with additional gates and new parking lot locations identified in the Des Moines Airport Master Plan. The additional airport gates proposed in the plan do not result in a significant difference between traffic volumes in the no-build and build scenarios. The greatest difference between scenarios is the addition of parking locations and the resulting change in traffic patterns along Fleur Drive and Army Post Road. **Table 5** provides the overall intersection LOS for the three peak time periods in the 2020 Future Build scenario.

	Stop Control	FB AM Overall LOS (sec/veh)	FB Midday Overall LOS (sec/veh)	FB PM Overall LOS (sec/veh)
Fleur and Cowles/Porter	Unsignalized	F (53.1)	D (28.5)	F (>120)
Fleur and Southlawn	Unsignalized	E (37.6)	C (17.3)	E (38.1)
Fleur and Highview	Signalized	A (5.6)	A (8.6)	B (11.4)
Fleur and Payton	Unsignalized	F (56.1)	C (23.9)	F (88.3)
Fleur and Leland	Unsignalized	D (30.1)	C (17.3)	F (71.8)
Fleur and Army Post	Signalized	D (39.1)	C (25.0)	C (27.1)
Army Post and SW 28 <sup>th</sup>	Signalized	A (5.1)	A (5.0)	A (6.8)

 Table 5. 2020 Future Build Overall Intersection Performance

\*LOS of unsignalized intersections is based on the worst movement

Of the signalized intersections in **Table 5**, the intersection of Fleur Drive and Army Post Road experiences the worst LOS in all three peak periods, but has not surpassed the acceptable LOS threshold (LOS D). All unsignalized intersections experience LOS F in at least one of the three peak hours.

**Table 6** provides the overall intersection LOS for the three peak time periods in the 2040 Future Build scenario.

		FB AM	FB Midday	FB PM
	Stop Control	Overall LOS (sec/veh)	Overall LOS (sec/veh)	Overall LOS (sec/veh)
Fleur and Cowles/Porter	Unsignalized	F (>120)	F (>114.8)	F (>120)
Fleur and Southlawn	Unsignalized	F (51.0)	D (28.8)	F (>120)
Fleur and Highview	Signalized	A (8)	B (12.6)	B (19.7)
Fleur and Payton	Unsignalized	F (>120)	F (68.2)	F (60.0)
Fleur and Leland	Unsignalized	F (>120)	F (>120)	F (>120)
Fleur and Army Post	Signalized	F (85.1)	C (33.3)	C (31.7)
Army Post and SW 28 <sup>th</sup>	Signalized	A (5.5)	A (5.2)	A (7.3)

#### Table 6. 2040 Future Build Overall Intersection Performance

\*LOS of unsignalized intersections is based on the worst movement

Of the signalized intersections in **Table 6**, the intersection of Fleur Drive and Army Post Road experiences the worst LOS in all three peak periods, and surpasses the acceptable LOS threshold (LOS D) in the AM peak period. All unsignalized intersections experience LOS F in at least two of the three peak hours. Future Build LOS results are graphically shown in **Appendices A-10 through A-15**.

#### 3.4 Queue Lengths

A queue length analysis was performed to determine existing intersection configurations that will not efficiently operate under future traffic conditions (**Table 7**). Traffic queue lengths exceeding roadway storage capacity may indicate the need for roadway improvements, such as additional or extended turn bays. Intersections in which traffic queues exceed storage bay lengths include the following intersections.

Table 7. Intersection Queues					
Intersection	Movement(s)	Year(s)			
Fleur Drive and Army Post Road	WBL, WBT, NBT, NBR, SBL, SBT, SBR	FNB 2020 & 2040, Future Build 2020 & 2040			

**Table 7. Intersection Queues** 

The queue length analysis supports geometric improvements at Fleur Drive and Army Post Road. Additional analysis would be needed to determine specific improvements to roadway geometry to mitigate these future queue length concerns. **Appendices B-2 and B-3** shows that queues in the westbound, northbound, and southbound directions exceed the existing storage length of the roadway.

#### 4.0 SAFETY ANALYSIS

DSM plans to construct a new terminal and 4-level parking structure to the northeast of the existing terminal. This will accommodate additional passengers and provide additional parking facilities at the airport. This safety analysis memorandum seeks to determine if any crash safety issues are present within the project area. Existing safety conditions were evaluated within the project study area to determine crash patterns and characteristics. Crash data was obtained from the lowa DOT for the years 2011 to 2015. The study area includes Army Post Road from SW 28<sup>th</sup> Street to Fleur Drive and Fleur Drive from Army Post Road to McKinley Avenue. **Figure 4** show the analysis areas.



#### Figure 4. Crash Analysis Areas

#### 4.1 Existing Crash Analysis

Crash rates on segments and intersections within the study area range from 20 to 176 crashes per hundred million vehicle miles traveled (HMVMT). All segments experience crash rates well under the latest statewide five-year average (2010-2014) for city streets of 375 crashes/HMVMT<sup>1</sup>. Table 8 shows the mainline crash rate for each segment and intersection. Table 9 shows the intersection crash rate for each segment. Additional crash type detail and broadside crash detail data is contained in Appendix B-38.

Mainline	Total Crashes	Average Daily Traffic	Section Length (Miles)	Crash Rate (HMVMT)
Army Post Rd between SW 28th St and Fleur Drive	4	9,300	0.48	49.10
Fleur Drive between Army Post Road and Leland Ave	5	17,300	0.09	175.96
Fleur Drive between Leland Avenue and Payton Avenue	1	17,300	0.05	63.35
Cowles Dr. to McKinley Avenue	32	28,250	0.38	163.34

#### Table 8. Mainline Crash Rates by Segment

Intersection	Total Crashes	Average Daily Traffic Entering	Section Length (Miles)	Crash Rate (HMVMT)
Intersection - Fleur Drive and Porter Avenue/Cowles Drive	17	26,810	N/A	34.74
Intersection - Fleur Drive and Southlawn Drive	5	19,522	N/A	14.03
Intersection - Fleur Drive and Highview Drive/Cowles Drive	20	21,431	N/A	51.14
Intersection - Fleur Drive and Payton Drive	7	19,126	N/A	20.05
Intersection - Fleur Drive and Leland Avenue	5	19,537	N/A	14.02
Intersection - Fleur Drive and Army Post Rd	49	25,296	N/A	106.14
Intersection - Army Post Rd and SW 28th St	3	8,003	N/A	20.5

#### **Table 9. Intersection Crash Rates by Segment**

<sup>&</sup>lt;sup>1</sup> "Crash Rates and Crash Densities in Iowa by Road System 2005-2014",

http://www.iowadot.gov/crashanalysis/pdfs/crash rate-density comparables segments 2005-

<sup>2014 20150817</sup> statewide.pdf, (April 13, 2017)

The highest total number of crashes occurred in 2014, as shown in **Figure 5**. In all years analyzed, most crashes occurred at intersections.

Specific areas with the highest crash rates are the north and south segments along Fleur Road on both sides of the Airport as well as the Fleur Drive and Army Post Road intersection. **Figure 6** shows the locations of crashes from 2011-2015. Very few crashes occur along Army Post Road. The highest crash rate section is Fleur Drive between Army Post Road and Leland Avenue while the highest crash rate intersection is Fleur Drive and Army Post Rd.

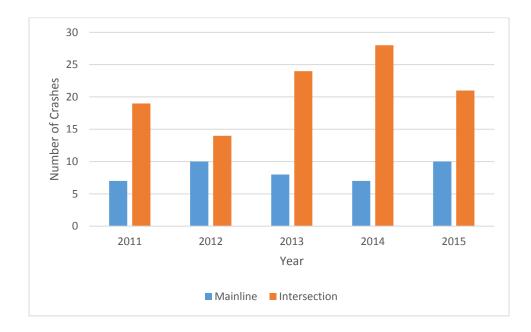


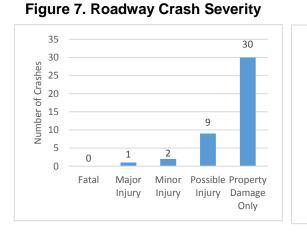
Figure 5. Crash Totals by Year



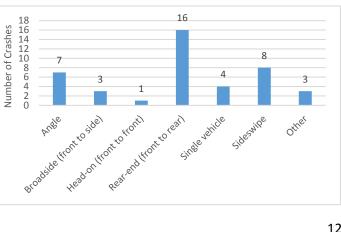
Figure 6. Crash Locations and High Crash Areas

#### **Roadway Segment Analysis**

Due to the proximity of intersections within the project study area there are four roadway segments of varying length. Between 2011 and 2015 a total of 42 incidents were reported along the mainline segments. Incidents on the roadway segments were overall low in severity, over 70-percent do not have injuries. There were no fatal crashes within the corridor over the five-year study period. Crash Types are consistent with low severity crashes on arterial streets with over 60-percent of incidents being rear-end, angle, or broadside in nature. Figures 7 and 8 show the breakdown of severity and crash type for the roadway segments, respectively.



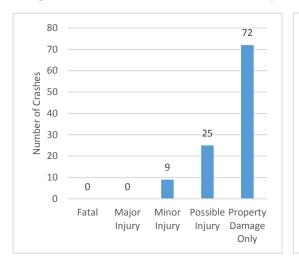




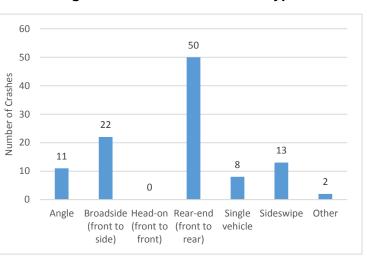
#### Intersection Analysis

A 400-foot area of influence was selected for analysis around each of the seven major intersections within the study area. This encompasses a reasonable area where traffic patterns associated with intersections may impact crashes. Two intersections were combined into one area of influence due to their proximity; the Cowles Drive/Fleur Drive intersection and the Porter Avenue/Fleur Drive intersection.

Overall most crashes are minor injury or property damage only, over 90-percent. There were no fatal crashes at intersections over the five-year study period. Crash types are consistent with low speeds, closely placed intersections, and turning movements with rear-end, angle, and broadside comprising over 75-percent of all crashes. **Figures 9** and **10** show the crash severity and crash type for all intersection crashes.









#### 4.2 Safety Conclusions

Overall rates of crashes are at least 50-percent less than statewide averages for similar types of roads. Crash types and severity are indicative of arterials with low speeds and volume. Rear end, broadside, and angle crashes are, by far, the most common within the study area, with rear end crashes making up 50-percent of the crashes. The main reason for the crashes appears to be due to the close spacing of intersections and conflicting turning movements. The broadside crashes appear to be mostly due to running red lights or failing to yield to the right of way movement. Improvements aimed at reducing those will help significantly reduce the rate of crashes within the study area.

#### **5.0 MULTIMODAL NETWORK CONDITIONS**

The Des Moines Comprehensive Plan, PlanDSM Creating Our Tomorrow, 2016, supports the development of a multimodal transportation network for all users, including pedestrians, bicyclists, transit, and automobile users. For DSM, these goals specifically include investigating "multimodal access between the airport and downtown, including non-stop bus service," and recognizing the "infrastructure that exists to move both products and people through the rail system and airports."<sup>2</sup>

The existing transportation network surrounding DSM includes transit service, bike trails, and sidewalk network. A description of each existing service/network is provided below.

#### Roadway Improvements

Des Moines 2016-2019 Transportation Capital Improvement Program has programmed McKinley Avenue to receive funding for widening from Fleur Drive to Indianola Avenue over the four-year time period. This east-west connector joins Fleur Drive just north of the main airport entrance.<sup>3</sup> *MoveDSM* will be Des Moines' first citywide transportation plan, providing a vision for the City over the next 25 years. Public outreach processes are now underway.

#### Transit

DART Local Route 8 provides service Monday – Friday with four trips in the morning between 6:00 am and 8:20 am and four trips in the afternoon between 3:00 pm and 6:15 pm. The route travels between DART Central Station and Airport South Park & Ride. This service connects Fleur Drive from Bell Avenue to Army Post Road, as well as SW 14<sup>th</sup> Street. DART stops are indicated by purple and orange signs on both the east and west sides of Fleur Drive. No shelters or benches are provided. From DART Central Station, passengers can transfer to any other local DART route. The businesses to the south of the airport have expressed interest in all day service for Route 8 at regular frequencies, although funding would need to be identified.

#### **Bike Access**

The City of Des Moines Bicycle and Trail Master Plan, 2011, provides the existing and proposed bicycle network within the city (**Figure 11**). The main arterial roadways surrounding DSM have both existing and proposed bike paths and shared use lanes.

Army Post Road, the east-west arterial south of the airport, has an existing shared-use path on the south side. This path connects to George Flagg Parkway in the northwest and to County Line Road in the southeast, both of which maintain the shared-use path connection. In addition, Army Post Road connects to SW 14<sup>th</sup> Street, a proposed bicycle boulevard, which will require signage, pavement markings, and improved crossings at major streets. SW 14<sup>th</sup> Street is a quieter residential street, making it more suitable for bicyclists than Fleur Drive.<sup>4</sup> SW 14<sup>th</sup> Street connects to Fleur Drive via Porter Avenue. There are no existing or proposed bicycle paths on Fleur Drive. McKinley Avenue, bordering the north side of DSM, is a proposed shared-use lane or bike lane, connecting to the bicycle boulevard on SW 14<sup>th</sup> Street.<sup>4</sup>

<sup>&</sup>lt;sup>2</sup> City of Des Moines. (2016). City of Des Moines Comprehensive Plan. Retrieved from http://www.dmgov.org/Departments/CommunityDevelopment/PDF/Plan%20DSM%20-%20Adopted%20April%2025,%202016.pdf

<sup>&</sup>lt;sup>3</sup> Des Moines Area MPO. Fiscal Year 2016-2019 Transportation Capital Improvement Program. (2015). Retrieved from https://dmampodemo.files.wordpress.com/2015/07/final-tip-ffy-2016-20191.pdf

<sup>&</sup>lt;sup>4</sup> Alta Planning and Design. (2011). City of Des Moines Bicycle and Trail Master Plan. Retrieved from https://www.dmgov.org/Departments/Parks/PDF/Bicycleandtrailsmasterplan.pdf

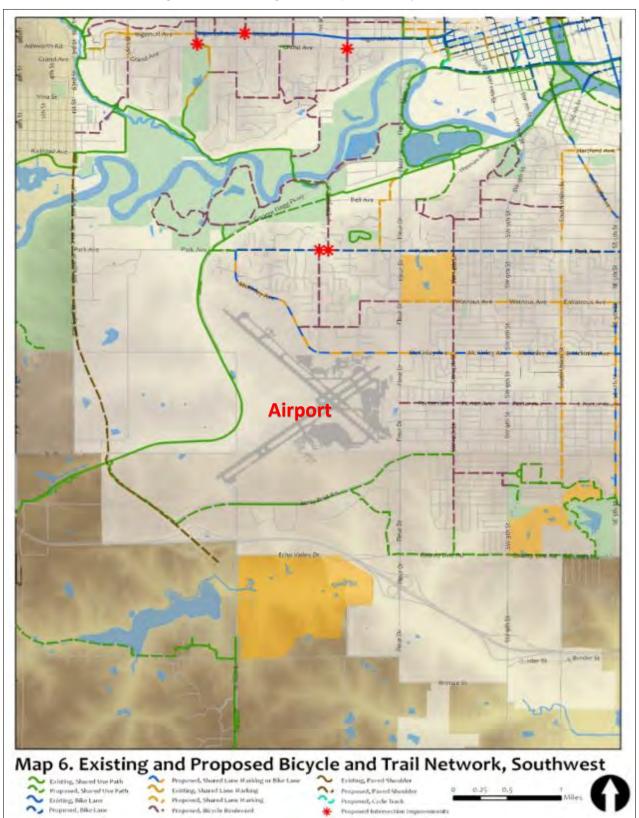


Figure 11. Existing and Proposed Bicycle Network

#### **Pedestrian Connections**

Pedestrian connections surrounding DSM are limited to sidewalks on the east side of Fleur Drive from McKinley Avenue in the north to Army Post Road in the south (**Figure 12**). The sidewalks along Fleur are not continuous. There are no sidewalk connections on the west side of Fleur Drive or along Army Post Road west of Fleur drive. Sidewalk connections exist on Army Post Road east of Fleur Drive and also connect along McKinley Avenue to residential areas to the east.

Pedestrian crossings are present at signalized intersections in the study area, including Fleur Drive and McKinley Avenue, Fleur Drive and Cowles Drive and Fleur Drive and Army Post Road.

Included in DSM's Terminal Site Study Plan, prepared in 2016, are pedestrian routes from the proposed terminal to the bus stop at Fleur Drive.<sup>5</sup>

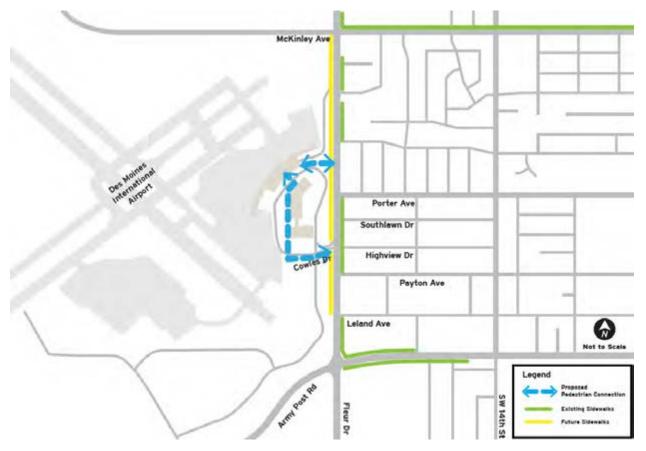


Figure 12. Existing Sidewalks Surrounding DSM

<sup>&</sup>lt;sup>5</sup> Des Moines International Airport: Addendum to Terminal Area Concept Plan Technical Report. (2016). Retrieved from http://www.dsmairport.com/webres/File/about-the-airport/terminalstudy/Terminal%20Site%20Study%20Update.pdf

#### 6.0 CONCLUSIONS AND RECOMMENDATIONS

#### Traffic Analysis

The traffic and safety operations analysis within the study area have demonstrated the need for future geometric improvements in both the Future Build and Future No-Build scenarios at the intersections of Army Post Road and Fleur Drive, and Cowles Drive and Porter Avenue. **Figure 13** compares the overall intersection LOS for each scenario and shows LOS F conditions at Porter Avenue and Army Post Road.





#### Safety Analysis

The traffic and safety analysis supports geometric improvements at Fleur Drive and Army Post Road as this intersection experiences the greatest number of crashes within the study area. Geometric improvements that could be considered include adding additional storage length on westbound, northbound and southbound movements or reconfiguring the number of storage lanes moving through the intersection.

#### **Multimodal Network Conditions**

The bicycle and pedestrian network currently experiences many gaps near DSM. The City is interested in infilling sidewalk connectivity throughout the study area concurrently with roadway projects. These plans are in support of City master plans to improve multimodal connections throughout the city.

#### **Recommendations**

The proposed configuration of Fleur and Cowles/Highview is shown in **Figure 14** below. The full set of recommended preliminary design plans is shown in **Appendix C**. The following improvements are recommended for the future (2040) conditions, pending discussions between the airport and city as well as outcomes from the City of Des Moines transportation master plan:

- Synchronizing the cycle lengths would improve the corridor operations in the future years (2020 and 2040) for all options.
- Adding dual left turn bays to the westbound left and southbound left at Fleur and Army Post Road allows for the overall intersection to operate acceptably in all peak hours in 2040. This would be needed with or without the proposed airport terminal expansion.
- Providing sidewalks along Fleur on both the east and west sides of the road from Army Post Road to north of Porter Avenue should be evaluated as a potential pedestrian improvement.
- For the new Highview / Cowles / Fleur intersection, only a single northbound left and single southbound right are needed inbound into the Airport while maintaining the current configuration of the rest of the intersection. If pedestrian access is desired along the north side or west side of the intersection, the southbound right should be signal controlled instead of free-flow as was originally proposed. The existing outbound configuration (dedicated eastbound left, shared eastbound left / through, and dedicated eastbound right) is expected to remain operating at LOS D or better through 2040. No changes are recommended to other movements.
- Improving Fleur to six lanes from Army Post Road to at least McKinley Avenue would improve the traffic operations of the corridor, but would likely necessitate the closure of side roads to maintain safety. This improvement is not being recommended in the near term, but closing the side road access is the only solution capable of producing acceptable level of service at all the unsignalized intersections. However, due to the public impact, the City of Des Moines may decide this is not a tenable solution.

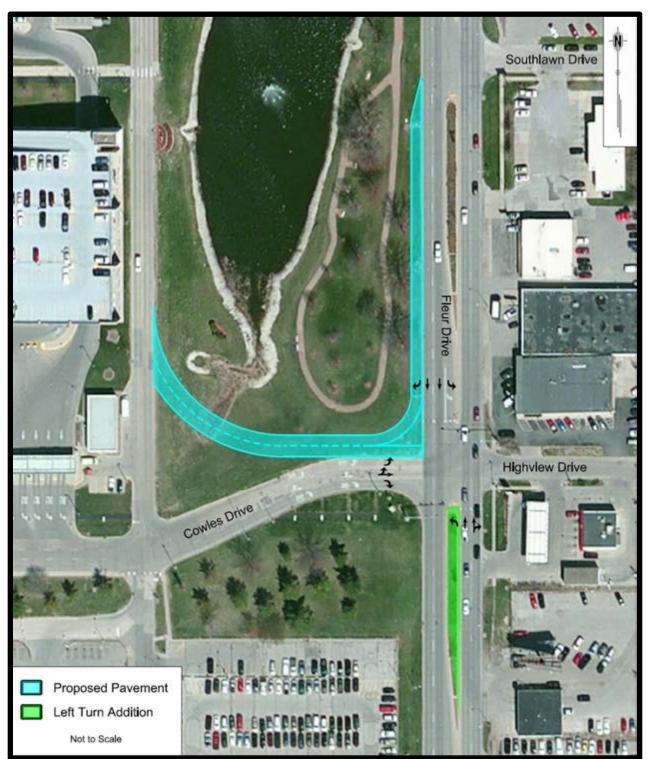


Figure 14. Proposed Geometric Configuration

<u>APPENDIX</u> F

WETLANDS

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From: colleen.conroy@dnr.iowa.gov <colleen.conroy@dnr.iowa.gov> On Behalf Of Joint Application, DNR
Sent: Monday, March 18, 2019 8:53 AM
To: Moritz, Eva S <<u>Eva.Moritz@foth.com</u>>; Foley, Kevin J. <<u>KJFoley@dsmairport.com</u>>
Subject: (FP 47976, SL 16770) Replacement Terminal Joint Application Tracking Info

Flood Plain: 47976

Sovereign Lands: 16770

Your application was logged under the tracking numbers listed above.

Flood Plain Contact: 866-849-0321 (toll free)

Sovereign Lands Contact: Seth Moore, 515-725-8464, SLER@dnr.iowa.gov, Seth.Moore@dnr.iowa.gov

Please use the assigned tracking numbers on all future correspondence for this project.

This correspondence does not constitute a permit. When review has been completed of the received application a final determination concerning Sovereign Lands and Floodplains permitting will be issued.

Joint Applications can now be submitted electronically to JointApplication@dnr.iowa.gov.

If a permit is issued the completion card can be emailed back to <u>JointApplication@dnr.iowa.gov</u>.

Thank you,



Colleen Conroy | Administrative Assistant Iowa Department of Natural Resources P 515-725-8268 | F 515-725-8202 502 E 9th St, Des Moines, IA 50319 www.iowadnr.gov



DEPARTMENT OF THE ARMY CORPS OF ENGINEERS, ROCK ISLAND DISTRICT PO BOX 2004 CLOCK TOWER BUILDING ROCK ISLAND, ILLINOIS 61204-2004

October 4, 2018

**Operations Division** 

SUBJECT: CEMVR-OD-P-2018-0866

Mr. David Full RS&H Iowa, P.C. 369 Pine Street, Suite 610 San Francisco, California 94104

Dear Mr. Full:

Our office reviewed your Preliminary Jurisdictional Determination request, which was received on July 12, 2018, for the Des Moines International Airport Site located in Sections 29, 30, 31 & 32, Township 78 North, Range 24 West, Polk County, Iowa.

Our office has completed a Preliminary Jurisdictional Determination concerning your project area and it appears that 0.84 acres of forested wetland, 2.67 acres of emergent wetland and approximately 2,280 linear feet of stream has been determined to be jurisdictional. The pond, found on the east of the property, has been determined to be a manmade structure created on dry land to collect and retain water and is therefore not jurisdictional.

A copy of our Preliminary Jurisdictional Determination is enclosed. You do not need to respond to the Corps regarding the Preliminary JD. This Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD. You are advised that this jurisdictional determination for your project is valid for five years from the date of this letter. If the project is not completed within this five-year period or your project plans change, you should contact our office for another determination.

Should you have any questions, please contact our Regulatory Branch by letter, or telephone Abby Steele at 309/794-5377.

Sincerely,



Michael D. Hayes Chief, Iowa Permit Section

#### Enclosure

Copy Furnished:

Ms. Christine Schwake (3) Iowa Department of Natural Resources Water Resources Section Wallace State Office Building 502 East 9<sup>th</sup> Street Des Moines, Iowa 50319-0034

Ms. Eva Moritz Foth 8191 Birchwood Court, Suite L Johnston, Iowa 50131 Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

#### BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: 10/04/18

B. NAME AND ADDRESS OF PERSON REQUESTING PJD: Mr. David Full, RS&H Iowa, P.C., 369 Pine Street, Suite 610, San Francisco, CA 94104

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: MVR, RS&H Iowa P.C. PJD, 2018-0866

#### D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: (USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: |owa

wa County/parish/borough: Polk City: Des Moines

Center coordinates of site (lat/long in degree decimal format):

Lat.: 41.51980 Long.: -93.668397

Universal Transverse Mercator: 15

Name of nearest waterbody: Middle Creek

#### E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date: 10/04/18

Field Determination. Date(s):

## TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.

Site	Latitude	Longitude	Estimated amount of	Types of Aquatic	Geographic authority to
Numb		C	aquatic resource in	Resources (i.e.,	which the aquatic
er			review area (acreage	wetland vs. non-	resources "may be"
			and linear feet, if	wetland waters)	subject (i.e., Section
			applicable)		404 or Section 10/404)
WL 1	41.519899	-93.688567	0.29 acres	Forested Wetland	404
WL 2	41.519899	-93.665913	0.08 acres	Forested Wetland	404
WL 3	41.522053	-93.667472	0.24 acres	<b>Emergent Wetland</b>	404
WL4	41.522693	-93.667029	0.46 acres	Emergent Wetland	404
WL 5	41.523087	-93.668005	0.20 acres	Emergent Wetland	404
WL 6	41.523995	-93.667200	1.00 acres	Emergent Wetland	404
WL 7	41.525800	-93.667593	0.44 acres	<b>Emergent Wetland</b>	404
WL 8	41.524534	-93.665598	0.17 acres	Forested Wetland	404
WL 9	41.522527	-93.673456	0.33 acres	Emergent Wetland	404
WL 10	41.522636	-93.657098	0.30 acres	Forested Wetland	404
WUS	41.523758	-93.659037	2,140 linear feet	Perennial Stream	404
1					
WUS	41.522934	-93.657579	140 linear feet	Ephemeral Stream	404
2					

 The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.

. . . (

2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD: (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional. and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there "may be" waters of the U.S. and/or that there "may be" navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

#### SUPPORTING DATA. Data reviewed for PJD (Check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

Maps, plans, plots or plat submitted by or on behalf of the PJD requestor: Map aerial map with sample sites

Data sheets prepared/submitted by or on behalf of the PJD requestor.

Office does not concur with data sheets/delineation report. Rationale: <u>There appears to be a</u> connection between Wetland 9 and a downstream WUS.

Data sheets prepared by the Corps:
Corps navigable waters' study:
U.S. Geological Survey Hydrologic Atlas:USGS NHD data.
USGS 8 and 12 digit HUC maps. U.S. Geological Survey map(s). Cite scale & quad name: IA-Des Moines SW
Natural Resources Conservation Service Soil Survey, Citation:
National wetlands inventory map(s). Cite name: Google Earth NWI Layer
State/local wetland inventory map(s):
FEMA/FIRM maps:
<ul> <li>100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)</li> <li>Photographs: Aerial (Name &amp; Date): ORM2-GIS, Google Earth</li> </ul>
or Other (Name & Date):
Previous determination(s). File no. and date of response letter:
Other information (please specify):
IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

 $O \sigma$ 

Signature and date of Regulatory staff member completing PJD Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

### Report

# **Wetland & WUS Delineation Report**

Replacement Terminal Environmental Assessment Project Des Moines International Airport Project I.D.: 18R009.00

RS&H Iowa, P.C. San Francisco, CA 94104

July 10, 2018





8191 Birchwood Court, Suite L Johnston, IA 50131 (515) 254-1393 • Fax: (515) 254-1642 www.foth.com

July 10, 2018

Mr. Michael Hayes United States Army Corps of Engineers P.O. Box 2004, Clock Tower Building Rock Island, IL 61204-2004

Dear Mr. Hayes:

RE: Wetland and WUS Delineation Report; Replacement Terminal Environmental Assessment Project, Des Moines International Airport, 5800 Fleur Drive, Des Moines, Iowa

Foth Infrastructure & Environment, LLC (Foth) is pleased to submit the Wetland Delineation Report prepared for RS&H Iowa, P.C. on behalf of the Des Moines International Airport. This report describes the technical criteria, field indicators, and other sources of information used to identify and delineate wetlands. Based on the results of the delineation, 3.51 acres of wetlands, 1.4 acres of pond/stormwater detention basin, 2,280 linear feet of Waters of the United States (WUS), and 520 linear feet of drainage features were identified in the project study area. **At this time, we are requesting that the USACE provide an approved Jurisdictional Determination so our client can evaluate avoidance and minimization steps that can be taken during the site design process. This report is part of an Environmental Assessment for the Replacement Terminal project and documentation of the jurisdictional status of wetlands and WUS is critical for the advancement of the project through the process. In order to avoid delays in the process, Foth is requesting that the USACE compete an Approved Jurisdictional Determination by August 30, 2018.** 

If you have any questions concerning this report, please contact Eva at 515-251-2524 or by e-mail at eva.moritz@foth.com.

Sincerely, Foth Infrastructure & Environment, LLC

Katie Goff Environmental Scientist

cc: Mr. David Full, RS&H Iowa, P.C.

Eva Moritz, P.E

Lead Environmental Engineer

### Distribution

<u>No. of Copies</u> 1	<u>Sent To</u> Mr. Michael Hayes United States Army Corps of Engineers P.O. Box 2004, Clock Tower Building Rock Island, IL 61204-2004
Electronic	Mr. David Full RS&H Iowa, P.C. 369 Pine Street, Suite 610 San Francisco, CA 94104

Replacement Terminal Environmental Assessment Project Des Moines International Airport Project ID: 18R009.00

Prepared for **RS&H Iowa, P.C.** 

369 Pine Street, Suite 610 San Francisco, CA 94104

#### Prepared by Foth Infrastructure & Environment, LLC

July 10, 2018

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8191 Birchwood Court, Suite L Johnston, IA 50131 (515) 254-1393 Fax: (515) 254-1642 • www.foth.com

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Appendix A	Aerial Photographs
Appendix B	Wetland Determination Data Forms
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#### **Executive Summary**

The purpose of performing the wetland delineation was to assess if wetlands or Waters of the United States (WUS) are present and, if so, to identify the boundaries. Foth reviewed map and aerial photograph resources, mobilized to the site to conduct the wetland delineation, and prepared this Wetland and WUS Delineation Report for the project study area.

Based on the results of the delineation, 3.51 acres of wetlands, 1.4 acres of pond/stormwater detention basin, 2,280 linear feet of WUS, and 520 linear feet of drainage features were identified in the project study area. Only the U.S. Army Corps of Engineers (USACE) can make the final determination on the jurisdictional status of wetlands or WUS, and on the need for permit processing and compensatory mitigation. If wetland or WUS impacts are proposed, a color copy of this report should be submitted to the USACE for confirmation of findings.



### List of Abbreviations, Acronyms, and Symbols

DP	Data Point
EF	Erosional Feature
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
Foth	Foth Infrastructure & Environment, LLC
FOTG	Field Office Technical Guide
GISU	Iowa State University Geographic Information System
GPS	Global Positioning System
JD	Jurisdictional Determination
LiDAR	Light Detection And Ranging
NL or NI	Not Listed or No Indicator
NRCS	Natural Resource Conservation Service
NRGIS	Natural Resources Geographic Information Systems Library
NWI	National Wetland Inventory
NWPL	National Wetland Plant List
Non-RPW	Non-Relatively Permanent Water
OHWM	Ordinary High Water Mark
OBL	Obligate Wetland
PEMA	Palustrine Emergent Temporarily Flooded
PEMAh	Palustrine Emergent Temporarily Flooded Diked/Impounded
PEMCx	Palustrine Emergent Persistent Seasonally Flooded Excavated
PUBGhx	Palustrine Unconsolidated Bottom Intermittently Exposed
rudulix	Diked/Impounded Excavated
RPW	Relatively Permanent Water
TNW	Traditional Navigable Water
UPL	Obligate Upland
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WL	Wetland
WSS	Web Soil Survey
WUS	Waters of the United States

## 1 Introduction

Foth Infrastructure & Environment, LLC (Foth) was retained by RS&H Iowa, P.C. on behalf of the Des Moines International Airport to perform a wetland delineation for the Replacement Terminal Environmental Assessment Project at the Des Moines International Airport. The project study area covers approximately 850 acres and is located in Sections 29, 30, 31 and 32, Township 78 North, Range 24 West, Des Moines, Polk County, Iowa as depicted on Figure 1.

### 1.1 Purpose

The purpose of performing the wetland delineation was to assess if wetlands or Waters of the United States (WUS) are present and, if so, to identify the boundaries. The delineation is part of the documentation that will be included in the Environmental Assessment for the replacement terminal project. The wetland delineation was performed in accordance with the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory, 1987) and the Midwest Regional Supplement (USACE, 2010). According to USACE guidelines, wetlands generally have three essential characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology.

### 1.2 Scope of Work

Foth performed the following scope of work:

- Reviewed map and aerial photograph resources to assist with identifying suspect WUS and wetland areas within the project study area.
- Mobilized to the project study area to conduct the wetland delineation.
- Prepared a wetland delineation map showing WUS and wetland areas identified during the site visit, if any.
- Completed a Wetland & WUS Delineation Report that included delineation rationale, a discussion of applicable data, and recommendations for the project study area.

### 2 Background Information

Prior to performing the delineation, several map and aerial photograph resources were reviewed to assist with identifying WUS and wetland areas at the project study area. Each source of data is described in below.

### 2.1 Topographic Map

The U.S. Geological Survey (USGS) 7.5-Minute Topographic Map (Iowa State University, 2017) was reviewed to identify WUS within the project study area. One unnamed tributary of Frink Creek is located in the northwest portion of the project study area and two unnamed tributaries of Middle Creek are located in the south/south-central portion of the project study area, as depicted on Figure 1. These unnamed tributaries appear to have an association with jurisdictional WUS. The topographic map also depicts a pond on the east side of the project study area; the pond does not appear to have a surface connection to a jurisdictional WUS.

#### 2.2 National Wetland Inventory Map

National Wetland Inventory (NWI) maps from the U.S. Fish and Wildlife Service (USFWS) (USFWS, 2018) and from the Natural Resources Geographic Information Systems (NRGIS) Library (NRGIS, n.d.) were reviewed to identify potential wetland areas within the project study area. NWI maps depict probable wetland areas based on stereoscopic analysis of high altitude aerial photographs. The NWI map from NRGIS is depicted on Figure 2.

The NWI map identified a Palustrine Emergent Persistent Seasonally Flooded Excavated (PEMCx) wetland in the northwest portion of the project study area. Another PEMCx wetland and a Palustrine Unconsolidated Bottom Intermittently Exposed Diked/Impounded Excavated (PUBGhx) pond were identified east of the existing terminal at the location of the pond.

### 2.3 Soil Survey of Polk County, Iowa

Foth utilized the Natural Resource Conservation Service (NRCS) soil survey maps and data available from the NRGIS Library and the Web Soil Survey (WSS) to identify soil types within the project study area. The NRCS soil survey map from NRGIS is depicted on Figure 3; however, this map may not depict the same soil classifications identified in the WSS.

The following table lists the hydric rating of the soils in the project vicinity, as identified by the WSS. According to the WSS, the rating indicates the proportion of map units that meets the criteria for hydric soils. "Hydric" means that all components listed for a given map unit are rated as being hydric. "Predominantly hydric" means components that comprise 66 to 99 percent of the map unit are rated as hydric. "Partially hydric" means components that comprise 33 to 66 percent of the map unit are rated as hydric. "Predominantly non-hydric" means components that comprise 33 to 66 percent of the map unit are rated as hydric. "Predominantly non-hydric" means components that comprise that comprise up to 33 percent of the map unit are rated as hydric. "Non-hydric" means that none of the components are rated as hydric.

NRCS Map Unit Symbol	NRCS Map Unit Name	WSS Hydric Soil Rating	Hydric Soil Rating Description
11B	Colo-Judson silty clay loams, 0 to 5 percent slopes, occasionally flooded	65	Partially hydric
24D2	Shelby clay loam, 9 to 14 percent slopes, moderately eroded	0	Non-hydric
76C2	Ladoga silty clay loam, dissected till plain, 5 to 9 percent slopes, eroded	0	Non-hydric
76D2	Ladoga silty clay loam, 9 to 14 percent slopes, eroded	0	Non-hydric
179D2	Gara clay loam, 9 to 14 percent slopes, moderately eroded	0	Non-hydric

#### Table 2-1 – Soil Survey Summary

NRCS Map Unit Symbol	NRCS Map Unit Name	WSS Hydric Soil Rating	Hydric Soil Rating Description
370B	Sharpsburg silty clay loam, 2 to 5 percent slopes	0	Non-hydric
370C2	Sharpsburg silty clay loam, 5 to 9 percent slopes, eroded	0	Non-hydric
370D2	Sharpsburg silty clay loam, 9 to 14 percent slopes, eroded	0	Non-hydric
822D2	Lamoni silty clay loam, 9 to 14 percent slopes, moderately eroded	0	Non-hydric
4000	Urban land	0	Non-hydric
4370B	Sharpsburg-Urban land complex, 2 to 5 percent slopes	0	Non-hydric
4370C	Sharpsburg-Urban land complex, 5 to 9 percent slopes	0	Non-hydric
5040	Orthents, loamy	0	Non-hydric
W	Water		

#### 2.4 Aerial Photographs

Foth reviewed aerial photographs obtained from the Iowa State University Geographic Information System (GISU) (Iowa State University, 2017) to identify suspected wetland areas on the project study area. Aerial photographs from 2017, 2015, 2014, 2013, 2011, 2010, 2009, 2008, 2007, 2006, 2005, 2004, 2002, 1990s, 1980s, 1970s, 1960s, 1950s, and 1930s were reviewed and have been included as Figures 7 through 24 in Appendix A.

Foth utilized the NRCS climatic data for Polk County to give an indication of whether a year is "wet," "dry," or "normal" depending on when the photograph was taken. The Wets table gives a month by month summary and probability analysis of temperature and precipitation. The objective of the Wets table is to define the normal range for monthly precipitation and normal range for growing season, which are both required to assess the climatic characteristics for a geographic area over a representative time period. Please note that photograph dates are not available for the GISU aerial photographs and that the aerials reviewed may not correspond to the NRCS aerial photograph dates. The following table summarizes the "wet," "dry," and "normal" precipitation aerials according to the NRCS Wets table for Polk County:

Aerial Year	April to June	May to July	June to August
2002	Dry	Normal	Normal
2003	Wet	Normal	Dry
2004	Normal	Normal	Normal
2005	Wet	Normal	Dry
2006	Dry	Dry	Normal
2007	Wet	Normal	Wet
2008	Wet	Wet	Normal
2009	Normal	Normal	Normal
2010	Wet	Wet	Wet
2011	Wet	Normal	Normal
2012	Normal	Dry	Dry
2013	Wet	Normal	Dry
2014	Wet	Normal	Wet

 Table 2-2 – Aerial Photograph Summary

Based on the previous table, 2004 and 2009 would be considered "normal" years. 2010 would be considered a "wet" year and 2012 was a "dry" to "normal" year.

The current airport runways, terminal building and supporting areas are present on the 2017 through 2004 aerial photographs. Changes to the runway lengths, the location of Army Post Road, and paved areas within the airport are evident in the 1990s, 2002, and 2004 aerials. The terminal and runway appear to have changed again in the 1960s aerial and in the 1930s aerial. In each of the historic aerials, the areas surrounding the runways, aprons and terminal buildings appear to have been significantly disturbed by grading to create a level airfield. A pond appears to have been constructed east of the terminal building prior to the 1950s aerial. The southwest quadrant of the project study area appears to have been farmed in the 2017 through 1930s aerials. Drainage features were apparent throughout the farmed areas on each of the historic aerial photos. Several areas of possible saturation or stressed vegetation were observed within the southwest quadrant on the historic aerials; during the site visit, data points were collected in the areas of historic saturation.

### 2.5 Hillshade Map

Foth reviewed the Hillshade Map (Iowa State University, 2017) of the project study area to assist in identifying potential lowland areas. The Hillshade Map uses Light Detection And Ranging (LiDAR) data to depict the approximate topography of the project study area. The portion of the project study area associated with the runways and terminal appears to be artificially filled to create a level airfield, as depicted on Figure 4. Drainage features and low-lying areas are apparent within the farmed portion of the project study area. The pond east of the existing terminal does not appear to have a surface connection to a WUS.

### 2.6 Climatic Data

Foth utilized the NRCS Field Office Technical Guide (FOTG) website (NRCS, 2018 c) to prepare a precipitation analysis for the project study area. The FOTG site utilizes NRCS National Water and Climate Center historical climatic data from National Weather Service data stations throughout the United States. FOTG Wets analysis data allows users to calculate the growing season limits and "normal" monthly and annual precipitation based on 30-years of accumulated temperature and rainfall records. Foth utilized a NRCS spreadsheet to analyze precipitation data in comparison to the Wets data to evaluate whether the project study area is drier than normal, normal, or wetter than normal in the seven and thirty calendar days prior to the site visit. The evaluation utilized Wets and precipitation data from the Des Moines International Airport weather station. According to the spreadsheet evaluation, the amount of precipitation was wetter than normal seven days prior to the site visit and normal 30 days prior to the site visit. A copy of the evaluation has not been included with this report, but can be provided upon request.

### 2.7 Wetland Observations

An experienced Foth wetland scientist used technical criteria, field indicators, historic aerial photographs, and other sources of information to evaluate the project study area. The evaluation methods generally followed the routine on-site determination method referenced in the 1987 USACE Manual and 2010 Midwest Supplement.

Wetlands generally have three essential characteristics: hydrophytic (wetland) vegetation, hydric soils, and wetland hydrology. Several representative observation locations were selected within each suspect wetland area. Vegetation, soils and hydrology were evaluated within each suspect area to determine if wetland characteristics were present. The techniques for evaluating the plant community, soils, and hydrology are described in the following sections.

#### 2.7.1 Plant Community Assessment

Suspect areas were visually observed to assess the species and absolute percentage of ground cover for four strata of plant community types. Herbs were generally observed within a five-foot radius, shrubs/saplings within a fifteen-foot radius, and trees and vines within a thirty-foot radius of the observation location. Several representative observation locations were selected within each suspected wetland area to generally represent the vegetation characteristics of the whole community. The vegetation for each selected area was identified using resources including, but not limited to, the National Wetland Plant List (USACE, 2016), Weeds of the Great Plains (Nebraska Department of Agriculture, 2003), The Tree Identification Book (Symonds G. , 1958), and The Shrub Identification Book (Symonds, The Shrub Identification Book, 1963).

For each species of vegetation observed, their wetland indicator status was evaluated. Indicator status was assessed using the National Wetland Plant List (NWPL) (USACE, 2016). Indicator categories for vegetation are presented below:

- Obligate Wetland (OBL) almost always occur in wetlands.
- **Facultative Wetland (FACW)** usually occur in wetlands, but may occur in non-wetlands.
- Facultative (FAC) occur in wetlands and non-wetlands.
- Facultative Upland (FACU) usually occur in non-wetlands, but may occur in wetlands.
- Upland (UPL) almost never occur in wetlands.
- Not Listed or No Indicator (NL or NI) species was not listed in the USACE Plant List for the Midwest regions. If listed, the classification for the Great Plains or Northcentral/Northeast Region was used. Otherwise the species was assumed to be UPL.

The percent cover of each stratum was assessed and dominance was evaluated. Dominant species were the most abundant species that accounted for more than 20 percent of the absolute percent coverage of the stratum. The number of dominant species with an indicator status of OBL, FACW, and/or FAC was compared to the total number of dominant species across all strata. Typically, if more than 50 percent of the dominant species had an indicator status of OBL, FACW, and/or FAC, then hydrophytic vegetation was present.

If the percentage of dominant species with an indicator status of OBL, FACW, and/or FAC was less than 50 percent, prevalence index and morphological adaptations may have been evaluated to confirm if hydrophytic vegetation was present or absent.

#### 2.7.2 Hydric Soils Assessment

After Foth evaluated wetland vegetation, subsurface soil samples were collected using a soil probe or tile spade. The samples were collected to a depth of approximately 18 to 24 inches below ground surface and were visually compared to the Munsell Soil Color Book (Munsell Color, 2012), which aided in the evaluation of hydric soil characteristics. Soil characteristics were also evaluated using the 2010 Midwest Regional Supplement (USACE, 2010). The soil samples were further examined for hydric soil indicators including, but not limited to, histosol, thick dark surface, sandy gleyed matrix, sandy redox, loamy gleyed matrix, redox dark surface, and/or redox depressions. If these or other hydric soil indicators were observed in the subsurface soil sample, then the observation location was considered to have a hydric soil.

#### 2.7.3 Wetland Hydrology Assessment

Visual indicators of wetland hydrology were evaluated using the 2010 Midwest Regional Supplement (USACE, 2010). Examples of primary wetland hydrology indicators include, but are not limited to, surface water, high water table, soil saturation, water marks, sediment deposits, drift deposits, iron deposits, inundation visible on aerial imagery, sparsely vegetated concave surface, and water-stained leaves. If at least one primary or two secondary indicators were observed, then the observation location was considered to have wetland hydrology.

#### 2.7.4 Classification of Wetlands

Upon completion of the review of the three wetland criteria at each area, a wetland determination was made. Under normal circumstances, if one or more of the wetland criteria were not identified, then the area was not considered to be a wetland. If all three wetland indicators were identified, then the area was classified as wetland. Additional observations were made throughout the wetland area to define the wetland/non-wetland boundary, which was mapped with Global Positioning System (GPS) technology or flagged and surveyed by traditional methods. Vegetation, soil and hydrology assessment data from at least one location within the wetland and one upland location outside of the wetland were recorded on a USACE Wetland Determination Form. The recorded data forms for the project study area can be found in Appendix B and the data point locations are depicted on Figures 5A through 5F. The wetland locations plotted on the USGS topographic map are depicted on Figure 6.

Observations were made about the potential jurisdictional status of the identified wetlands based on the USACE Jurisdictional Determination Form Instructional Guidebook (USACE & EPA, 2007). The following definitions from the guidebook were used:

- Wetland adjacent to a Traditional Navigable Water (TNW): adjacent means bordering, contiguous, or neighboring. Includes wetlands separated from a WUS by a man-made dike or barrier or natural river berm.
- Wetland directly abutting a Relatively Permanent Water (RPW) that flow directly to a TNW: a continuous surface connection does not require surface water to be continually present between the wetland and tributary.
- Wetland adjacent to but not directly abutting a RPW that flows to a TNW: Wetland separated from a WUS by man-made dikes or barriers or natural river berms are considered adjacent.
- Wetland adjacent to a Non-Relatively Permanent Water (Non-RPW) that flows to a TNW: Includes wetlands separated from a WUS by a man-made dike or barrier or natural river berm.
- Isolated Wetland: geographically isolated.
- Wetland within a ditch: wetlands that are present within a feature that was excavated, including roadside ditches.

#### 2.8 WUS Observations

Foth also made observations of site features that may be considered a WUS. If a potential WUS was identified, observations regarding its characteristics were recorded. The following definitions were used when describing the WUS:

- WUS Characteristics (USACE & EPA, 2007):
  - Traditional Navigable Water (TNW): includes all of the navigable waters of the U.S.

- Relatively Permanent Water (RPW) that flows directly or indirectly to a TNW: flow through the tributary (natural, man-altered, or man-made water body) is year-round or continuous flow at least seasonally.
- Non-Relatively Permanent Water (Non-RPW) that flows directly or indirectly to a TNW: flow through the tributary is not continuous at least seasonally.
- Ditch: features that are excavated, including roadside ditches.
- Swale: shallow feature on the landscape that may convey water across upland areas during and following storm events. Swales usually occur on or near flat slopes and typically have grass or other low-lying vegetation throughout the swale.
- Erosional Feature: eroded features including gullies.
- Flow Characteristics:
  - Perennial: contains water at all times except during extreme drought.
  - Intermittent: carries water a considerable portion of the time, but ceases to flow occasionally or seasonally.
  - Ephemeral: carries water only during and immediately after periods of rainfall or snowmelt.
- Ordinary High Water Mark (OHWM): The limit line on the shore established by the fluctuation of the water surface. This limit is shown by such things as a clear line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, the presence of litter and debris or other features influenced by the surrounding area.
- WUS Bank: the land area immediately adjacent to and which slopes toward the bed of a watercourse and which is necessary to maintain the integrity of the watercourse.
- Bank Shape Descriptions:
  - Undercut: banks that overhang the stream channel
  - Steep: bank slope of approximately greater than 30 degrees
  - Gradual: bank slope of approximately 30 degrees or less
- Aquatic Habitat Descriptions:
  - Pool: deeper portion of a stream where water flows slower than in neighboring, shallower portions, smooth surface, and finer substrate
  - Riffle: shallow area in a stream where water flows swiftly over gravel and rock or other coarse substrate resulting in a rough flow and a turbulent surface

• Run: section of a stream with a low or high velocity and with little or no turbulence on the surface of the water.

### **3 Field Observation Results**

On May 8, 2018, Foth performed fieldwork and identified wetlands and WUS within the project study area. The areas are designated as Wetland 1 through 10, WUS-1 and WUS-2, Erosional Features EF-1 and EF-2, and Pond 1, as depicted on Figures 5 through 5F. Wetland Determination Data Forms for each wetland area can be found in Appendix B. Ground photographs, included in Appendix C, provide an indication of the physical characteristics observed during the site visit. The following sections describe the wetlands, WUS and ponds identified during the delineation.

Please note that data points were not collected in the ditches and low-lying areas adjacent to the runways and aprons due to safety concerns and site access issues related to FAA regulations. These areas were historically graded and artificially manipulated during construction of the runways and supporting apron areas. The ditches are regularly mowed and maintained to avoid the creation of a hazardous wildlife attractants. If wetlands do exist within the runway and apron ditches, they would likely be considered isolated and/or non-jurisdictional. Photos 25 through 40 in Appendix C show the conditions within the fenced area of the project study area. Portions of an area northeast of SW 28<sup>th</sup> Street were under construction during the site visit and were not evaluated. Photos 24, 43 and 44 show the upland areas that are under construction.

#### 3.1 Wetland Areas

### 3.1.1 Wetland Area 1

	Wetland Description	
Wetland ID	WL-1	
Size	0.29 acres	
Sampling Point(s)	DP-1	
Photograph ID	1	
Jurisdictional Characteristics	Wetland adjacent to a Non-RPW th	hat flows to a TNW
Association w/ WUS	Wetland 1 appears to be in the upp drainageway that flows to Middle	
Wetland Description	Low-lying area within a drainageway created by the construction of Army Post Road	
NWI Map Designation	None	
Cowardin Classification	Palustrine Emergent Temporarily I	Flooded (PEMA)
Wetland Type	Emergent surrounded by trees	
Vegetative Cover	Dense	
Dominant Vegetation	<u>Common Name (Scientific Name) WL Indicator</u> Green Ash ( <i>Fraxinus pennsylvanica</i> ) FACW Eastern Cottonwood ( <i>Populus deltoids</i> ) FAC Sandbar Willow ( <i>Salix interior</i> ) FACW Reed Canary Grass ( <i>Phalaris arundinacea</i> ) FACW	
Hydrogeomorphic Class	Depression, Riverine	
Soil Type (soil survey)	11B – Colo-Judson silty clay loams, 0 to 5 percent slopes, occasionally flooded	
Soil Type (field obs.)	Silty clay loam	
Soil Characteristics	Redox Dark Surface	
Hydrology Characteristics	Drainage Patterns and FAC Neutra	ıl Test
Hydrology Source	Surface water runoff	
	Non-Wetland (Upland) Descript	ion
Data Point(s)		DP-2
Habitat Type		Forested
Was there a marked differen	nce between the wetland/upland	No, Gradual
Was there a gradual change and upland creating a "trans	in vegetation between the wetland sition zone"	Yes, Width of transition zone ~ 10 feet
Was there an abrupt topogra and upland	aphic change between the wetland	No, Gradual
		Prepared by: ESM

#### 3.1.2 Wetland Area 2

	Wetland Description		
Wetland ID	WL-2		
Size	0.08 acres		
Sampling Point(s)	DP-3		
Photograph ID	2		
Jurisdictional Characteristics	Wetland adjacent to a Non-RPW th	at flows to a TNW	
Association w/ WUS	Wetland 2 appears to be in the uppe drainageway that flows to Middle C	-	
Wetland Description	Low-lying area within a drainagewa Army Post Road	Low-lying area within a drainageway created by the construction of	
NWI Map Designation	None		
Cowardin Classification	Palustrine Emergent Temporarily F	looded (PEMA)	
Wetland Type	Emergent surrounded by trees		
Vegetative Cover	Dense		
Dominant Vegetation	Common Name (Scientific Name) WL Indicator Eastern Cottonwood ( <i>Populus deltoids</i> ) FAC Sandbar Willow ( <i>Salix interior</i> ) FACW Reed Canary Grass ( <i>Phalaris arundinacea</i> ) FACW River-Bank Grape ( <i>Vitis riparia</i> ) FACW		
Hydrogeomorphic Class	Depression, Riverine		
Soil Type (soil survey)	76D2 - Ladoga silty clay loam, 9 to 14 percent slopes, eroded		
Soil Type (field obs.)	Silty clay loam		
Soil Characteristics	Redox Dark Surface		
Hydrology Characteristics	Drainage Patterns and FAC Neutral Test		
Hydrology Source	Surface water runoff		
	Non-Wetland (Upland) Descript	ion	
Data Point(s)		DP-4	
Habitat Type		Forested	
Was there a marked differ upland	ence between the wetland and	No, Gradual	
Was there a gradual chang and upland creating a "tran	e in vegetation between the wetland nsition zone"	Yes, Width of transition zone ~ 5 feet	
Was there an abrupt topog and upland	raphic change between the wetland	No, Gradual	

Checked by: <u>RPB</u>

#### 3.1.3 Wetland Area 3

	Wetland Description	
Wetland ID	WL-3	
Size	0.24 acres	
Sampling Point(s)	DP-5	
Photograph ID	3	
Jurisdictional Characteristics	Wetland adjacent to a Non-RPW th	at flows to a TNW
Association w/ WUS	Wetland 3 appears to be in the upper portion of an unnamed drainageway that flows to Frink Creek (via culverts under the runway)	
Wetland Description	Low-lying area within a drainagewa	ау
NWI Map Designation	None	
Cowardin Classification	Palustrine Emergent Temporarily F	looded (PEMA)
Wetland Type	Emergent with some tree growth	
Vegetative Cover	Dense	
Dominant Vegetation	<u>Common Name (Scientific Name) WL Indicator</u> Sandbar Willow ( <i>Salix interior</i> ) FACW Eastern Cottonwood ( <i>Populus deltoids</i> ) FAC Reed Canary Grass ( <i>Phalaris arundinacea</i> ) FACW	
Hydrogeomorphic Class	Riverine	
Soil Type (soil survey)	370B - Sharpsburg silty clay loam,	2 to 5 percent slopes
Soil Type (field obs.)	Silty clay loam	
Soil Characteristics	Redox Dark Surface	
Hydrology Characteristics	Drainage Patterns and FAC Neutral Test	
Hydrology Source	Surface water runoff	
	Non-Wetland (Upland) Descript	ion
Data Point(s)		DP-6
Habitat Type		Wetland vegetation with some trees
Was there a marked differupland	ence between the wetland and	No, Gradual
Was there a gradual chang and upland creating a "tran	e in vegetation between the wetland nsition zone"	Yes, Width of transition zone ~ 10 feet
Was there an abrupt topog and upland	raphic change between the wetland	No, Gradual

Checked by: <u>RPB</u>

#### 3.1.4 Wetland Area 4

	Wetland Description	
Wetland ID	WL-4	
Size	0.46 acres	
Sampling Point(s)	DP-7	
Photograph ID	4	
Jurisdictional Characteristics	Wetland adjacent to a Non-RPW the	at flows to a TNW
Association w/ WUS	Wetland 4 appears to be in the upper portion of an unnamed drainageway that flows to Frink Creek (via culverts under the runway)	
Wetland Description	Low-lying area within a drainagewa	ıy
NWI Map Designation	None	
Cowardin Classification	Palustrine Emergent Temporarily F	looded (PEMA)
Wetland Type	Emergent with some tree growth	
Vegetative Cover	Dense	
Dominant Vegetation	<u>Common Name (Scientific Name) WL Indicator</u> Sandbar Willow ( <i>Salix interior</i> ) FACW Honey Locust ( <i>Gleditsia triacanthos</i> ) FACU Box Elder/Ash-Leaf Maple ( <i>Acer negundo</i> ) FAC Reed Canary Grass ( <i>Phalaris arundinacea</i> ) FACW Cattail species ( <i>Typha sp.</i> ) OBL	
Hydrogeomorphic Class	Riverine	
Soil Type (soil survey)	370D2 - Sharpsburg silty clay loam, 2 to 5 percent slopes	
Soil Type (field obs.)	Silty clay loam	
Soil Characteristics	Redox Dark Surface	
Hydrology Characteristics	Drainage Patterns and FAC Neutral Test	
Hydrology Source	Surface water runoff	
	Non-Wetland (Upland) Descript	ion
Data Point(s)		DP-14
Habitat Type		Wetland vegetation with some trees
Was there a marked differe	ence between the wetland/upland	Yes, Change in vegetation
Was there a gradual change and upland creating a "tran	e in vegetation between the wetland sition zone"	Yes, Width of transition zone ~ 5 feet
Was there an abrupt topogr and upland	aphic change between the wetland	No, Gradual

Prepared by: <u>ESM</u> Checked by: <u>RPB</u>

#### 3.1.5 Wetland Area 5

	Wetland Description	
Wetland ID	WL-5	
Size	0.20 acres	
Sampling Point(s)	DP-9	
Photograph ID	5	
Jurisdictional Characteristics	Wetland adjacent to a Non-RPW th	at flows to a TNW
Association w/ WUS	Wetland 5 appears to be in the upper portion of an unnamed drainageway that flows to Frink Creek (via culverts under the runway)	
Wetland Description	Man-made detention basin in a drainageway. Based on an aerial review, the basin appears to have been constructed in the 1990s	
NWI Map Designation	None	
Cowardin Classification	Palustrine Emergent Temporarily Flooded Diked/Impounded (PEMAh)	
Wetland Type	Emergent with minor tree growth	
Vegetative Cover	Dense	
Dominant Vegetation	Common Name (Scientific Name) WL Indicator Sandbar Willow (Salix interior) FACW Reed Canary Grass (Phalaris arundinacea) FACW	
Hydrogeomorphic Class	Depression	
Soil Type (soil survey)	370D2 - Sharpsburg silty clay loam, 2 to 5 percent slopes	
Soil Type (field obs.)	Silty clay loam	
Soil Characteristics	Redox Dark Surface	
Hydrology Characteristics	Geomorphic Position and FAC Neutral Test	
Hydrology Source	Surface water runoff	
	Non-Wetland (Upland) Descript	ion
Data Point(s)		DP-10
Habitat Type		Wetland Vegetation
Was there a marked differ upland	ence between the wetland and	Yes, change in vegetation and topography
Was there a gradual chang and upland creating a "tra	ge in vegetation between the wetland nsition zone"	No, abrupt change in vegetation
	graphic change between the wetland	Yes

Checked by: <u>RPB</u>

#### 3.1.6 Wetland Area 6

	Wetland Description	
Wetland ID	WL-6	
Size	1.00 acres	
Sampling Point(s)	DP-11 and DP-12	
Photograph ID	6 and 7	
Jurisdictional Characteristics	Wetland adjacent to a Non-RPW th	at flows to a TNW
Association w/ WUS	Wetland 6 appears to be in the upper portion of an unnamed drainageway that flows to Frink Creek (via culverts under the runway)	
Wetland Description	Low-lying area within a drainagewa	ay
NWI Map Designation	None	
Cowardin Classification	Palustrine Emergent Temporarily F	looded (PEMA)
Wetland Type	Emergent with some tree growth	
Vegetative Cover	Dense	
Dominant Vegetation	<u>Common Name (Scientific Name) WL Indicator</u> Sandbar Willow ( <i>Salix interior</i> ) FACW Eastern Cottonwood ( <i>Populus deltoids</i> ) FAC Reed Canary Grass ( <i>Phalaris arundinacea</i> ) FACW	
Hydrogeomorphic Class	Depression, Riverine	
Soil Type (soil survey)	11B – Colo-Judson silty clay loams, 0 to 5 percent slopes, occasionally flooded	
Soil Type (field obs.)	Silty clay loam	
Soil Characteristics	Redox Dark Surface	
Hydrology Characteristics	Drainage Patterns, Geomorphic Position and FAC Neutral Test	
Hydrology Source	Surface water runoff	
	Non-Wetland (Upland) Descript	tion
Data Point(s)		DP-13 and DP-14
Habitat Type		Wetland Vegetation with some tree growth
Was there a marked differ upland	ence between the wetland and	No, gradual
Was there a gradual chang and upland creating a "tra	ge in vegetation between the wetland nsition zone"	Yes, Width of transition zone ~ 20 feet
	raphic change between the wetland	No, gradual

Prepared by: <u>ESM</u> Checked by: <u>RPB</u>

#### 3.1.7 Wetland Area 7

	Wetland Description	
Wetland ID	WL-7	
Size	0.44 acres	
Sampling Point(s)	DP-15	
Photograph ID	8	
Jurisdictional Characteristics	Wetland adjacent to a Non-RPV	V that flows to a TNW
Association w/ WUS	Wetland 7 appears to be in the upper portion of an unnamed drainageway that flows to Frink Creek (via culverts under the runway)	
Wetland Description	Low-lying area within a drainag of the runway	seway created by the construction
NWI Map Designation	Palustrine Emergent Seasonally	Flooded Excavated (PEMCx)
Cowardin Classification	Palustrine Emergent Temporari	ly Flooded (PEMA)
Wetland Type	Emergent	
Vegetative Cover	Dense	
Dominant Vegetation	<u>Common Name (Scientific Name) WL Indicator</u> Common Spike-Rush ( <i>Eleocharis palustris</i> ) OBL Reed Canary Grass ( <i>Phalaris arundinacea</i> ) FACW Softstem bulrush ( <i>Schoenoplectus tabernaemontani</i> ) OBL	
Hydrogeomorphic Class	Depression, Riverine	
Soil Type (soil survey)	11B – Colo-Judson silty clay loams, 0 to 5 percent slopes, occasionally flooded	
Soil Type (field obs.)	Silty clay loam	
Soil Characteristics	Redox Dark Surface	
Hydrology Characteristics	Surface Water, High Water Tab Crust, Iron Deposits, Sparsely V Muck Surface, FAC Neutral Te	Vegetated Concave Surface, Thin
Hydrology Source	Surface water runoff	
l	Non-Wetland (Upland) Descript	tion
Data Point(s)		DP-16
Habitat Type		Wetland vegetation with some tree growth
Was there a marked difference	e between the wetland/upland	Yes, change in vegetation an topography
Was there a gradual change in and upland creating a "transitie	vegetation between the wetland on zone"	Yes, Width of transition zone ~ 5 feet
Was there an abrupt topograph and upland	nic change between the wetland	No, gradual
		Prepared by: <u>ESM</u> Checked by: <u>RPB</u>

#### 3.1.8 Wetland Area 8

	Wetland Description	
Wetland ID	WL-8	
Size	0.17 acres	
Sampling Point(s)	DP-17	
Photograph ID	9	
Jurisdictional Characteristics	Wetland adjacent to a Non-RPW th	at flows to a TNW
Association w/ WUS	Wetland 8 appears to be in the upper portion of an unnamed drainageway that flows to Frink Creek (via culverts under the runway)	
Wetland Description	Low-lying area within a drainagewa	ау
NWI Map Designation	None	
Cowardin Classification	Palustrine Emergent Temporarily F	looded (PEMA)
Wetland Type	Forested	
Vegetative Cover	Dense	
Dominant Vegetation	Common Name (Scientific Name) V Box Elder/Ash-Leaf Maple (Acer na Eastern Cottonwood (Populus delto Reed Canary Grass (Phalaris aruna	egundo) FAC ids) FAC
Hydrogeomorphic Class	Riverine	
Soil Type (soil survey)	370D2 - Sharpsburg silty clay loam, 2 to 5 percent slopes	
Soil Type (field obs.)	Clay loam	
Soil Characteristics	Redox Dark Surface	
Hydrology Characteristics	Geomorphic Position and FAC Neutral Test	
Hydrology Source	Surface water runoff	
	Non-Wetland (Upland) Descript	ion
Data Point(s)		DP-18
Habitat Type		Forested
Was there a marked differe upland	ence between the wetland and	Yes, change in vegetation and topography
Was there a gradual change and upland creating a "tran	e in vegetation between the wetland asition zone"	Yes, Width of transition zone ~ 10 feet
	raphic change between the wetland	No, gradual

#### 3.1.9 Wetland Area 9

	Wetland Description	
Wetland ID	WL-9	
Size	0.33 acres	
Sampling Point(s)	DP-20	
Photograph ID	12	
Jurisdictional Characteristics	Isolated Wetland	
Association w/ WUS	Wetland 9 is in a low-lying area at the end of a culvert. It does not appear to have a connection to a WUS	
Wetland Description	Isolated wetland at a culvert outlet	
NWI Map Designation	None	
Cowardin Classification	Palustrine Emergent Temporarily F	looded (PEMA)
Wetland Type	Emergent	
Vegetative Cover	Dense	
Dominant Vegetation	<u>Common Name (Scientific Name) WL Indicator</u> Reed Canary Grass ( <i>Phalaris arundinacea</i> ) FACW Cattail species ( <i>Typha sp.</i> ) OBL	
Hydrogeomorphic Class	Depression	
Soil Type (soil survey)	11B – Colo-Judson silty clay loams, 0 to 5 percent slopes, occasionally flooded	
Soil Type (field obs.)	Silty clay loam	
Soil Characteristics	Redox Dark Surface	
Hydrology Characteristics	Drainage Patterns, Geomorphic Position and FAC Neutral Test	
Hydrology Source	Surface water runoff	
	Non-Wetland (Upland) Descript	tion
Data Point(s)		DP-21
Habitat Type		Wetland Vegetation
Was there a marked differ upland	rence between the wetland and	No, gradual
Was there a gradual chang and upland creating a "tra	ge in vegetation between the wetland nsition zone"	Yes, Width of transition zone ~ 10 feet
Was there an abrupt topog and upland	graphic change between the wetland	Yes

Checked by: <u>RPB</u>

#### 3.1.10 Wetland Area 10

	Wetland Description	
Wetland ID	WL-10	
Size	0.30 acres	
Sampling Point(s)	DP-22	
Photograph ID	13 and 14	
Jurisdictional Characteristics	Wetland adjacent to but not directly TNW	abutting a RPW that flows to a
Association w/ WUS	Wetland 10 appears to be in the upp drainageway that flows to Middle C	
Wetland Description	Man-made detention basin adjacent appears to have been constructed in	
NWI Map Designation	None	
Cowardin Classification	Palustrine Emergent Temporarily Flooded Diked/Impounded (PEMAh)	
Wetland Type	Forested	
Vegetative Cover	Dense	
Dominant Vegetation	<u>Common Name (Scientific Name) WL Indicator</u> Eastern Cottonwood ( <i>Populus deltoids</i> ) FAC Slippery Elm ( <i>Ulmus rubra</i> ) FAC Reed Canary Grass ( <i>Phalaris arundinacea</i> ) FACW Sedge species ( <i>Carex sp.</i> ) assumed FACW	
Hydrogeomorphic Class	Depression, Riverine	
Soil Type (soil survey)	11B – Colo-Judson silty clay loams, 0 to 5 percent slopes, occasionally flooded	
Soil Type (field obs.)	Silty clay loam	
Soil Characteristics	Redox Dark Surface	
Hydrology Characteristics	Surface Water, High Water Table, Saturation, Algal Mat or Crust, Sediment Deposits, Drift Deposits, Geomorphic Position and FAC Neutral Test	
Hydrology Source	Surface water runoff	
	Non-Wetland (Upland) Descript	tion
Data Point(s)		DP-23
Habitat Type		Forested, Wetland Vegetation
Was there a marked difference between the wetland/upland		Yes, change in vegetation and topography
Was there a gradual chang and upland creating a "tran	e in vegetation between the wetland nsition zone"	No, abrupt
Was there an abrupt topo.	change between wetland/upland	Yes
		Prepared by: <u>ESM</u> Checked by: <u>RP</u>

#### Waters of the United States 3.2

#### 3.2.1 WUS-1

WUS-1           2,140 feet *           17, 18, 19, 20           Unnamed tributary of Middle Creek
17, 18, 19, 20
Unnamed tributary of Middle Creek
South-central portion of the project study area
RPW that flows to a TNW
Natural, Manipulated
Perennial
Presence of litter and debris, Vegetation matted down, bent or absent, Sediment sorting, Leaf litter disturbed or washed away, Scour
None
4 to 10 feet
4 to 20 feet
2 to 10 feet
0 to 12 inches
Turbid
Orange, cloudy/hazy, brown
Moderate
South southeast
1 to 8 feet
1 to 8 feet
Left Bank: Undercut
Right Bank: Undercut
Sand, Soil
Gravel/Rock, Sand, Soil
Forest
Yes, WL-10
Minnows, crawfish
Run, Pool

#### 3.2.2 WUS-2

	Waters of the	United States Description
WUS ID		WUS-2
Approximate Length Onsite		140 feet
Photograph ID		14, 15
Name of Water Body		Unnamed tributary of Middle Creek
Location		South-central portion of the project study area. WUS-2 drains to WUS-1.
Jurisdictional Characte	eristics	Non-RPW that flow to TNW
WUS Type		Manipulated
Flow Characteristics		Ephemeral
Ordinary High Water Mark Description		Presence of litter and debris, Vegetation matted down, bent or absent, Sediment sorting, Leaf litter disturbed or washed away, Scour
NWI Map Designation	1	None
Channel Width Across	S OHWM	2 to 5 feet
Channel Width Across	Bank Top	4 to 6 feet
Channel Width Across Water Surface or Dry Bottom		2 to 4 feet
Water Depth		2 to 8 inches
Water Clarity		Turbid
Water Color		Brown
Stream Flow		Pooled
Stream Flow Direction	1	West
Donk Unight	Left Bank:	0.5 to 3 feet
Bank Height	Right Bank:	0.5 to 3 feet
% Slope On Banks		Left Bank: Gradual to steep
70 Slope Oli Baliks		Right Bank: Gradual to steep
Bank Substrate		Soil
Bed Substrate		Soil
Riparian Vegetation D	escription	Forest
Wetland Fringe		Yes, WL-10
Aquatic Organisms		None observed
Aquatic Habitat		Pool

#### 3.3 Drainage Features

The following drainage features were identified within the project study area. These areas may not be considered jurisdictional by the USACE.

ID       EF-1         Approximate Length Onsite       450 feet         Photograph ID       10         Location       Between Wetland 7 and Wetland 8         Jurisdictional Characteristics       Erosional Feature         Description       EF-1 and EF-2 may be remnant continuations of the WUS-1 channel. The features appear to be connected on the 1930s aerial; however, from the 1950s through 2017 there is not an apparent connection between the channels due to farming and/or grading for building construction.         Flow Characteristics       Ephemeral         Ordinary High Water Mark Description       Presence of litter and debris, Leaf litter disturbed or washed away, Scour         NWI Map Designation       None         Channel Width Across Bank Top       2 to 4 feet         Channel Width Across Bank Top       2 to 4 feet         Water Depth       None         Flow       Slow         Flow Direction       Slow         Flow Direction       Northwest         Bank Height       Left Bank:       0.5 to 2 feet         % Slope On Banks       Soil         Bank Substrate       Soil         Bank Substrate       Soil         Bank Substrate       Soil         Riparian Vegetation Description       Forest         Wetland Fringe       None			Description		
Photograph ID       10         Location       Between Wetland 7 and Wetland 8         Jurisdictional Characteristics       Erosional Feature         Description       EF-1 and EF-2 may be remnant continuations of the WUS-1 channel. The features appear to be connected on the 1930s aerial; however, from the 1950s through 2017 there is not an apparent connection between the channels due to farming and/or grading for building construction.         Flow Characteristics       Ephemeral         Ordinary High Water Mark Description       Presence of litter and debris, Leaf litter disturbed or washed away, Scour         NWI Map Designation       None         Channel Width Across OHWM       2 to 4 feet         Channel Width Across Water Surface or Dry Bottom       2 to 5 feet         Water Depth       None         Flow       Slow         Flow Direction       Northwest         Bank Height       Left Bank:       0.5 to 2 feet         % Slope On Banks       Soil       Sdual         Bank Substrate       Soil       Soil         Bed Substrate       Soil       Soil         Bank Substrate       Soil       Soil         Riparian Vegetation Description       Forest         Wetland Fringe       None         Aquatic Organisms       None observed	ID		EF-1		
Location       Between Wetland 7 and Wetland 8         Jurisdictional Characteristics       Erosional Feature         Description       EF-1 and EF-2 may be remnant continuations of the WUS-1 channel. The features appear to be connected on the 1930s aerial; however, from the 1950s through 2017 there is not an apparent connection between the channels due to farming and/or grading for building construction.         Flow Characteristics       Ephemeral         Ordinary High Water Mark Description       Presence of litter and debris, Leaf litter disturbed or washed away, Scour         NWI Map Designation       None         Channel Width Across OHWM       2 to 4 feet         Channel Width Across Bank Top       2 to 5 feet         Channel Width Across Water Surface or Dry Bottom       None         Flow       Slow         Flow Direction       Northwest         Bank Height       Left Bank:       0.5 to 2 feet         % Slope On Banks       Soil       Secture         Bank Substrate       Soil       Soil         Bank Substrate       Soil       Soil         Riparian Vegetation Description       Forest         Wetland Fringe       None         Aquatic Organisms       None	Approximate Length	Onsite	450 feet		
Jurisdictional Characteristics       Erosional Feature         Jurisdictional Characteristics       Erosional Feature         Description       EF-1 and EF-2 may be remnant continuations of the WUS-1 channel. The features appear to be connected on the 1930s aerial; however, from the 1930s hrough 2017 there is not an apparent connection between the channels due to farming and/or grading for building construction.         Flow Characteristics       Ephemeral         Ordinary High Water Mark Description       Presence of litter and debris, Leaf litter disturbed or washed away, Scour         NWI Map Designation       None         Channel Width Across UHWM       2 to 4 feet         Channel Width Across Water Surface or Dry Bottom       2 to 4 feet         Water Depth       None         Flow Direction       None         Flow Direction       Northwest         Bank Height       Left Bank:       0.5 to 2 feet         % Slope On Banks       Soil         % Slope On Banks       Soil         Right Bank:       Soil         Bank Substrate       Soil         Bank Substrate       Soil         Rightran Vegetation Description       Forest         Wetland Fringe       None         Aquatic Organisms       None observed         Aquatic Habitat       Run	Photograph ID		10		
EF-1 and EF-2 may be remnant continuations of the WUS-1 channel. The features appear to be connected on the 1930s aerial; however, from the 1950s through 2017 there is not an apparent connection between the channels due to farming and/or grading for building construction.Flow CharacteristicsEphemeralOrdinary High Water Mark DescriptionPresence of litter and debris, Leaf litter disturbed or washed away, ScourNWI Map DesignationNoneChannel Width Across Huk Top2 to 4 feetChannel Width Across Water Surface or Dry Bottom2 to 5 feetChannel Width Across Water Surface or Dry Bottom2 to 4 feetNoneSlowFlow DirectionNoneFlow DirectionNorthwestBank HeightLeft Bank: Right Bank:0.5 to 2 feet% Slope On BanksLeft Bank: Right Bank: GradualBank SubstrateSoilBank SubstrateSoilRigharian Vegetation DescriptionForestWetland FringeNoneAquatic OrganismsNone observedAquatic HabitatRun	Location		Between Wetland 7 and Wetland 8		
WUS-1 channel. The features appear to be connected on the 1930s aerial; however, from the 1950s through 2017 there is not an apparent connection between the channels due to farming and/or grading for building construction.Flow CharacteristicsEphemeralOrdinary High Water Mark DescriptionPresence of litter and debris, Leaf litter disturbed or washed away, ScourNWI Map DesignationNoneChannel Width Across HWM2 to 4 feetChannel Width Across Bank Top2 to 5 feetChannel Width Across Water Surface or Dry Bottom2 to 4 feetChannel Width Across Water Surface or Dry Bottom2 to 4 feetFlowSlowFlow DirectionNoneFlow DirectionNoneFlow DirectionNorthwestBank HeightLeft Bank:% Slope On BanksLeft Bank:% Slope On BanksSoilRight Bank:SoilBank SubstrateSoilBank SubstrateSoilRigharian Vegetation DescriptionForestWetland FringeNoneAquatic OrganismsNone observedAquatic HabitatRun	Jurisdictional Charact	teristics	Erosional Feature		
Ordinary High Water Mark DescriptionPresence of litter and debris, Leaf litter disturbed or washed away, ScourNWI Map DesignationNoneChannel Width Across OHWM2 to 4 feetChannel Width Across Bank Top2 to 5 feetChannel Width Across Water Surface or Dry Bottom2 to 4 feetWater DepthNoneFlowSlowFlow DirectionNorthwestBank HeightLeft Bank: Right Bank:0.5 to 2 feet% Slope On BanksLeft Bank: Right Bank: GradualBank SubstrateSoilBank SubstrateSoilRightank:SoilRightank:NoneRightank:NoneAquatic OrganismsNoneAquatic HabitatRun	Description		WUS-1 channel. The features appear to be connected on the 1930s aerial; however, from the 1950s through 2017 there is not an apparent connection between the channels due to farming		
washed away, ScourNWI Map DesignationNoneChannel Width Across $\bigcirc$ HWM2 to 4 feetChannel Width Across $\blacksquare$ ank Top2 to 5 feetChannel Width Across $\blacksquare$ are Surface or Dry Bottom2 to 4 feetWater DepthNoneFlowSlowFlow DirectionNorthwestBank HeightLeft Bank: Right Bank: $\emptyset$ Slope On BanksLeft Bank: Right Bank: GradualBank SubstrateSoilBank SubstrateSoilRiparian Vegetation DescriptionForestWetland FringeNoneAquatic OrganismsNone observedAquatic HabitatRun	Flow Characteristics		Ephemeral		
Channel Width Across OHWM2 to 4 feetChannel Width Across Bank Top2 to 5 feetChannel Width Across Water Surface or Dry Bottom2 to 4 feetWater DepthNoneFlowSlowFlow DirectionNorthwestBank HeightLeft Bank:0.5 to 2 feet $\%$ Slope On BanksLeft Bank:Bank SubstrateSoilBank SubstrateSoilBank SubstrateSoilRiparian Vegetation DescriptionForestWetland FringeNoneAquatic OrganismsNone observedAquatic HabitatRun	Ordinary High Water Mark Description				
$\begin{array}{c c c c } \mbox{Channel Width Across Bank Top} & 2 to 5 feet \\ \hline \begin{tabular}{ c c } \hline \hline \begin{tabular}{ c c } \hline $	NWI Map Designation		None		
Channel Width Across Water Surface or Dry Bottom2 to 4 feetWater DepthNoneFlowSlowFlow DirectionNorthwestBank HeightLeft Bank:0.5 to 2 feetRight Bank:0.5 to 2 feet% Slope On BanksLeft Bank: GradualBank SubstrateSoilBank SubstrateSoilRight ank:SoilRiparian Vegetation DescriptionForestWetland FringeNoneAquatic OrganismsNone observedAquatic HabitatRun	Channel Width Acros	s OHWM	2 to 4 feet		
Dry Bottom2 to 4 feetWater DepthNoneFlowSlowFlow DirectionNorthwestBank HeightLeft Bank:0.5 to 2 feetRight Bank:0.5 to 2 feet% Slope On BanksLeft Bank: Gradual8ank SubstrateSoilBank SubstrateSoilRiparian Vegetation DesriptionForestWetland FringeNoneAquatic OrganismsNone observedAquatic HabitatRun	Channel Width Acros	s Bank Top	2 to 5 feet		
FlowSlowFlow DirectionNorthwestBank HeightLeft Bank:0.5 to 2 feetRight Bank:0.5 to 2 feet% Slope On BanksLeft Bank: Gradual% Slope On BanksKight Bank: GradualBank SubstrateSoilBed SubstrateSoilRiparian Vegetation DescriptionForestWetland FringeNoneAquatic OrganismsNone observedAquatic HabitatRun			2 to 4 feet		
Flow DirectionNorthwestBank HeightLeft Bank:0.5 to 2 feetRight Bank:0.5 to 2 feet% Slope On BanksLeft Bank: GradualBank SubstrateSoilBank SubstrateSoilBed SubstrateSoilRiparian Vegetation DescriptionForestWetland FringeNoneAquatic OrganismsNone observedAquatic HabitatRun	Water Depth		None		
Bank HeightLeft Bank:0.5 to 2 feetRight Bank:0.5 to 2 feet% Slope On BanksLeft Bank: GradualRight Bank: GradualRight Bank: GradualBank SubstrateSoilBed SubstrateSoilRiparian Vegetation DescriptionForestWetland FringeNoneAquatic OrganismsNone observedAquatic HabitatRun	Flow		Slow		
Bank HeightRight Bank:0.5 to 2 feet% Slope On BanksLeft Bank: GradualRight Bank: GradualRight Bank: GradualBank SubstrateSoilBed SubstrateSoilRiparian Vegetation DescriptionForestWetland FringeNoneAquatic OrganismsNone observedAquatic HabitatRun	Flow Direction		Northwest		
Right Bank:0.5 to 2 feet% Slope On BanksLeft Bank: GradualRight Bank: GradualRight Bank: GradualBank SubstrateSoilBed SubstrateSoilRiparian Vegetation DescriptionForestWetland FringeNoneAquatic OrganismsNone observedAquatic HabitatRun	Poply Hoight	Left Bank:	0.5 to 2 feet		
% Slope On BanksRight Bank: GradualBank SubstrateSoilBed SubstrateSoilRiparian Vegetation DescriptionForestWetland FringeNoneAquatic OrganismsNone observedAquatic HabitatRun		Right Bank:	0.5 to 2 feet		
Right Bank: GradualBank SubstrateSoilBed SubstrateSoilRiparian Vegetation DescriptionForestWetland FringeNoneAquatic OrganismsNone observedAquatic HabitatRun	% Slope On Banks		Left Bank: Gradual		
Bed SubstrateSoilRiparian Vegetation DescriptionForestWetland FringeNoneAquatic OrganismsNone observedAquatic HabitatRun			Right Bank: Gradual		
Riparian Vegetation DescriptionForestWetland FringeNoneAquatic OrganismsNone observedAquatic HabitatRun	Bank Substrate		Soil		
Wetland FringeNoneAquatic OrganismsNone observedAquatic HabitatRun	Bed Substrate		Soil		
Aquatic OrganismsNone observedAquatic HabitatRun	Riparian Vegetation Description		Forest		
Aquatic Habitat Run			None		
			None observed		
Prepared by: ESM	Aquatic Habitat				

#### **3.3.1** Erosional Feature 1

#### 3.3.2 Erosional Feature 2

Description			
ID		EF-2	
Approximate Length Onsite		70 feet	
Location		East of Wetland 8	
Jurisdictional Character	ristics	Erosional Feature	
Description		EF-1 and EF-2 may be remnant continuations of the WUS-1 channel. The features appear to be connected on the 1930s aerial; however, from the 1950s through 2017 there is not an apparent connection between the channels due to farming and/or grading for building construction.	
Flow Characteristics		Ephemeral	
Ordinary High Water Mark Description		Leaf litter disturbed or washed away, Scour	
NWI Map Designation		None	
Channel Width Across OHWM		2 to 3 feet	
Channel Width Across	Bank Top	3 to 5 feet	
Channel Width Across Water Surface or Dry Bottom		2 to 4 feet	
Water Depth		None	
Flow		Fast	
Flow Direction		West	
Donk Usight	Left Bank:	2 to 4 feet	
Bank Height	Right Bank:	2 to 4 feet	
0/ Slope On Denka		Left Bank: Undercut	
% Slope On Banks		Right Bank: Undercut	
Bank Substrate		Soil	
Bed Substrate		Soil	
Riparian Vegetation Description		Forest	
Wetland Fringe		None	
Aquatic Organisms		None observed	
Aquatic Habitat		Run	

#### 3.4 Waters of the United States – Ponds

#### **3.4.1 Pond 1 (Stormwater Detention Basin)**

Wat	Waters of the United States Description		
WUS ID	Pond 1 (Stormwater Detention Basin)		
Approximate Area	1.4 acres		
Photograph ID	21, 22, 23		
Name of Water Body	Unnamed stormwater detention basin		
Location	East of the terminal building adjacent to Fleur Drive		
WUS Type	Artificial, constructed prior to the 1950s		
Bank Description	Un-vegetated due to mowing/maintenance practices		
Wetland Fringe	A wetland fringe would likely grow along the pond/stormwater detention basin fringe if left unmaintained. Regular maintenance is needed to prevent creation of a hazardous wildlife attractant within the airport grounds.		
Aquatic Organisms	No observed		
NWI Map Designation	Palustrine Emergent Persistent Seasonally Flooded Excavated (PEMCx), Palustrine Unconsolidated Bottom Intermittently Exposed Diked/Impounded Excavated (PUBGhx)		
	Prepared by: <u>ESN</u>		

Checked by: <u>ESM</u> Checked by: <u>RPB</u>

#### **4 Wetland and Waters of the United States Summary**

This report details the procedures used to identify wetlands and WUS within the project study area. In accordance with the field procedures described in this report, wetlands and WUS were identified within the project study area. The following table summarizes the sizes of the delineated wetland within the project study area.

Wetland Identification	Wetland Area (acre	es)
WL-1	0.29	
WL-2	0.08	
WL-3	0.24	
WL-4	0.46	
WL-5	0.20	
WL-6	1.00	
WL-7	0.44	
WL-8	0.17	
WL-9	0.33	
WL-10	0.30	
Total	3.51	
	Ι	Prepared by: ESM

Table 4-1 – Wetland Area Summary

Prepared by: <u>ESM</u> Checked by: <u>RPB</u>

The following table summarizes the approximate lengths of WUS within the project study area.

WUS Identification	WUS Length (feet)	
WUS-1	2,140 *	
WUS-2	140	
Total	2,280 *	
* Within project study area		Prepared by: ESM
		Checked by: <u>RPB</u>

The following table summarizes the approximate lengths of drainage features within the project study area.

 Table 4-3 – Drainage Feature Length Summary

Identification	Length (feet)	
EF-1	450	
EF-2	70	
Total	520	

The following table summarizes the approximate sizes of pond/stormwater detention basin within the project study area.

Table 4-4 Tonu Area Summary		
WUS Identification		Pond Area (acres)
Pond 1 (Stormwater Detention Basin)	1.4	
Total	1.4	

#### Table 4-4 – Pond Area Summary

Prepared by: <u>ESM</u> Checked by: <u>RPB</u>

The approximate wetland boundaries and WUS locations are depicted on the Wetland Delineation Maps (Figures 5 through 5F).

### 5 **Recommendations**

Based on the results of the delineation, 3.51 acres of wetlands, 1.4 acres of pond/stormwater detention basin, 2,280 linear feet of WUS and 520 linear feet of drainage features were identified in the project study area. At this time, we are requesting that the USACE provide an approved Jurisdictional Determination (JD) so our client can evaluate avoidance and minimization steps that can be taken during the site design process. A Request for Corps JD form can be found in Appendix D. This report is part of an Environmental Assessment for the Replacement Terminal project and documentation of the jurisdictional status of wetlands and WUS is critical for the advancement of the project through the process. In order to avoid delays in the process, Foth is requesting that the USACE compete an Approved JD by August 30, 2018.

### **6 General Comments**

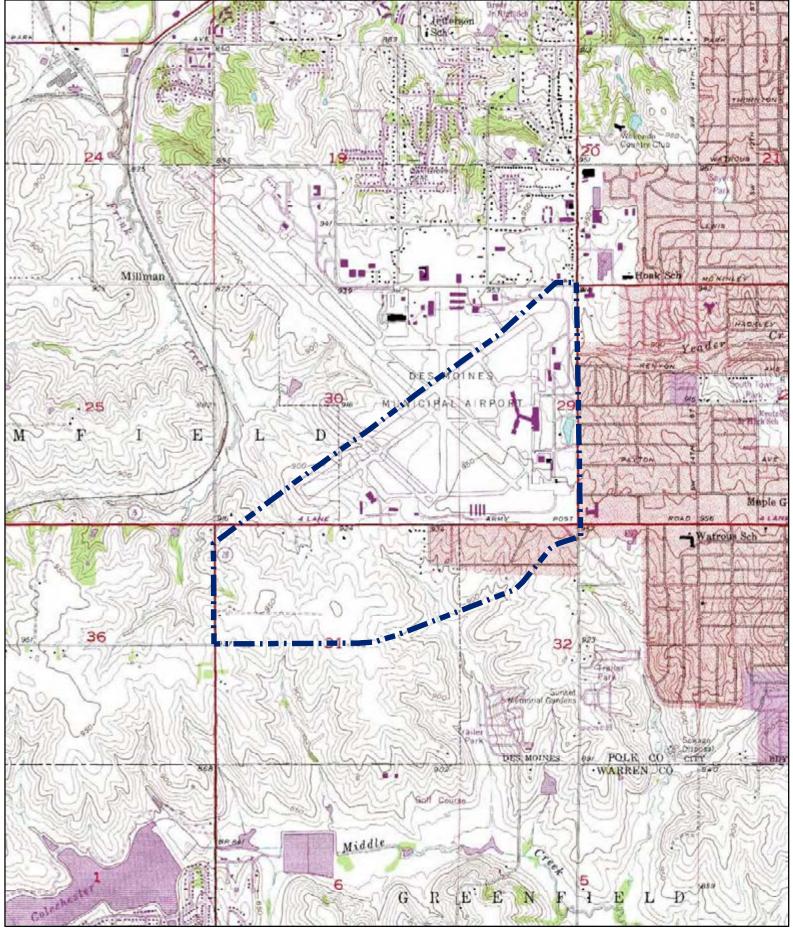
The wetland delineation was performed using the USACE Manual and Midwest Supplement. The manual provides assistance for delineating wetlands based on the three criteria discussed. However, the manual alone may not have provided enough information to document whether or not the three criteria were met. Various physical properties or other visual signs used to evaluate whether the three wetland identification criteria areas were satisfied may not be straightforward, especially in disturbed or problem areas. The manual also allows the user to visually estimate certain indicators such as the percentage of area covered by dominant species for the entire community. Foth did not attempt to identify every possible plant species and did not classify soil type by laboratory methods. Due to seasonal changes, Foth cannot guarantee the area to exhibit or not to exhibit wetland characteristics at all times of the year. The limitations of this wetland delineation should be recognized for the above reasons.

This report has been prepared in accordance with generally accepted scientific and engineering evaluation practices. This report is for the exclusive use of the client for the project being discussed. No warranties, express or implied, are intended or made.

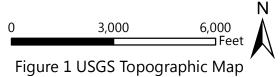
# 7 References

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Figures





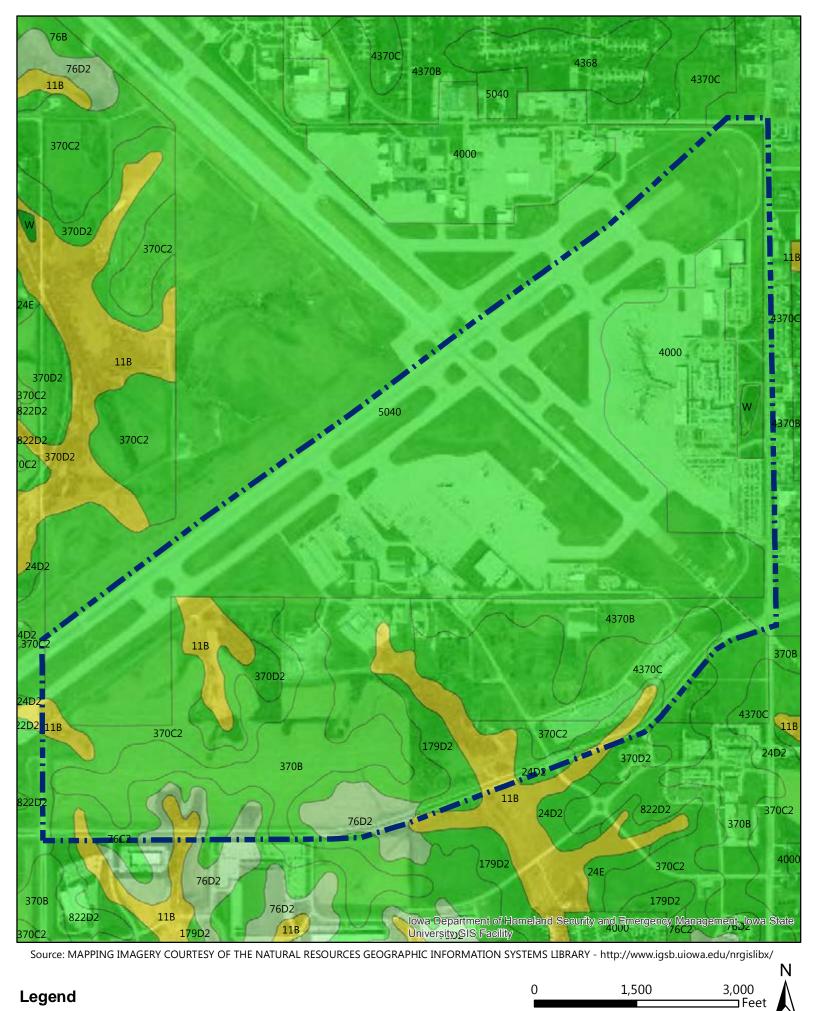






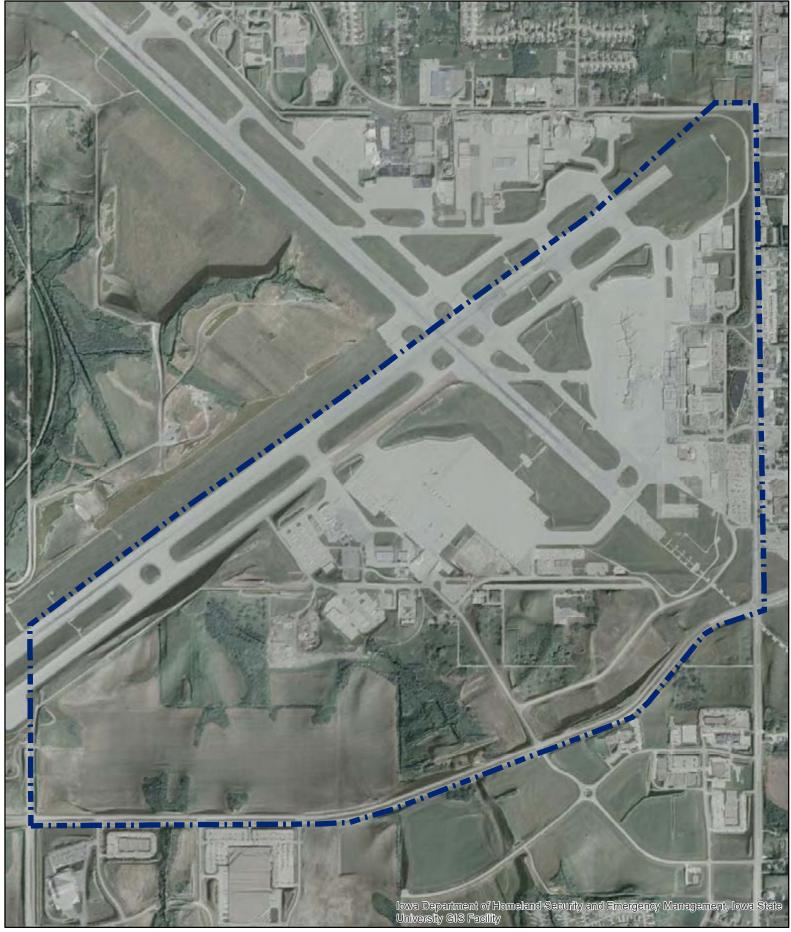
3,000 \_\_\_\_ Feet 1,500 Figure 2 National Wetland Inventory Map

0



Legend							
62	Project Study Area						

Figure 3 Soil Survey Map

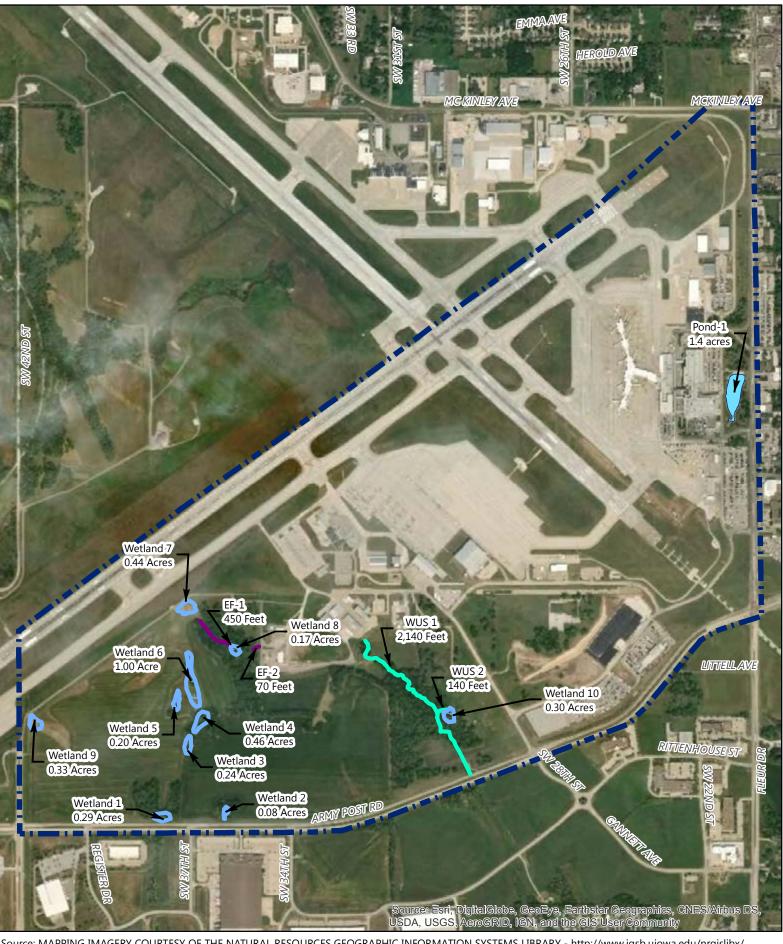




3,000 Figure 4 LiDAR Hillshade and Aerial Mapping

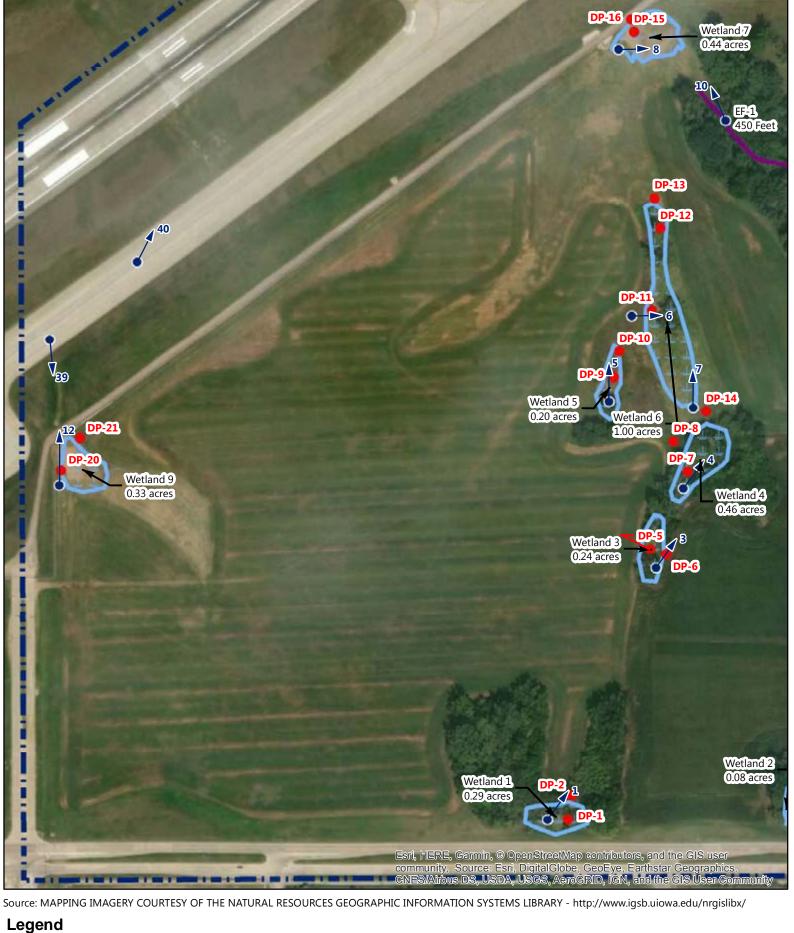
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1,500

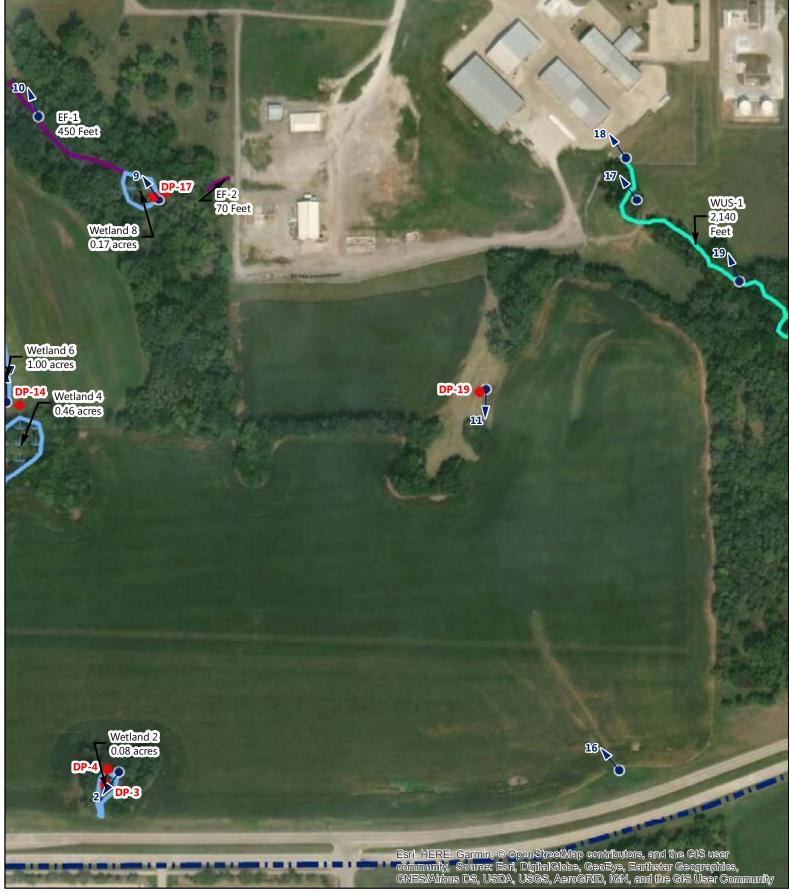


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Ν

800 — Feet

400





Wetland

WUS

#### Legend

- Project Study Area
  - Data Point
  - Photo Location and Direction

800 — Feet Figure 5C Wetland and WUS Delineation Map

400

0



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Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/

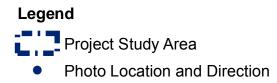
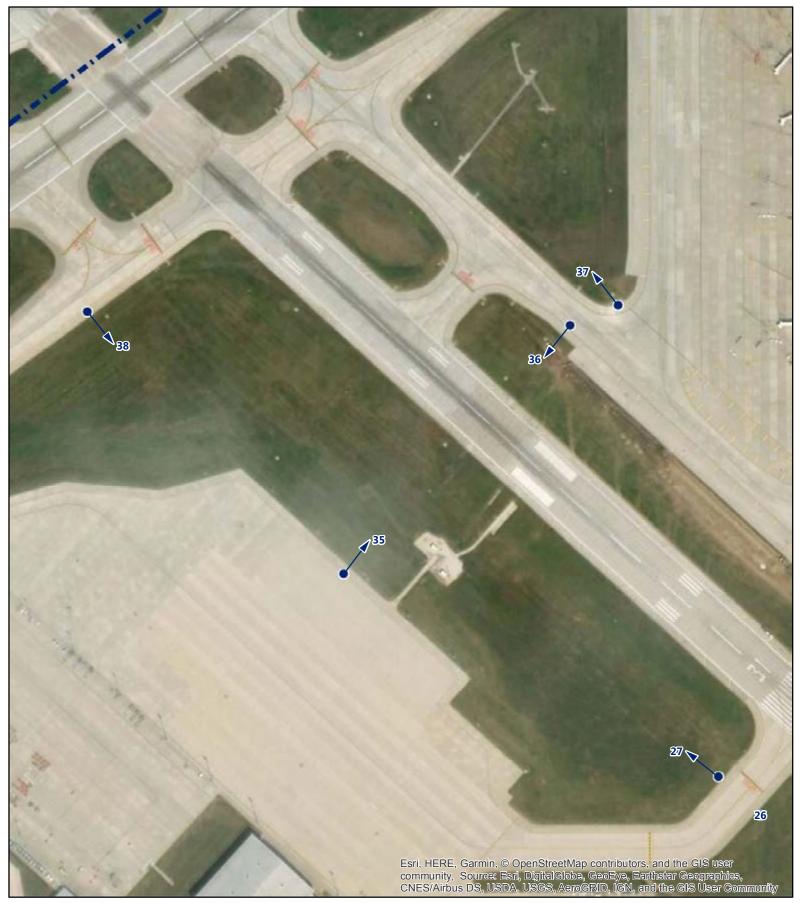
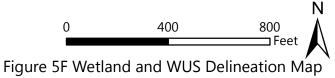


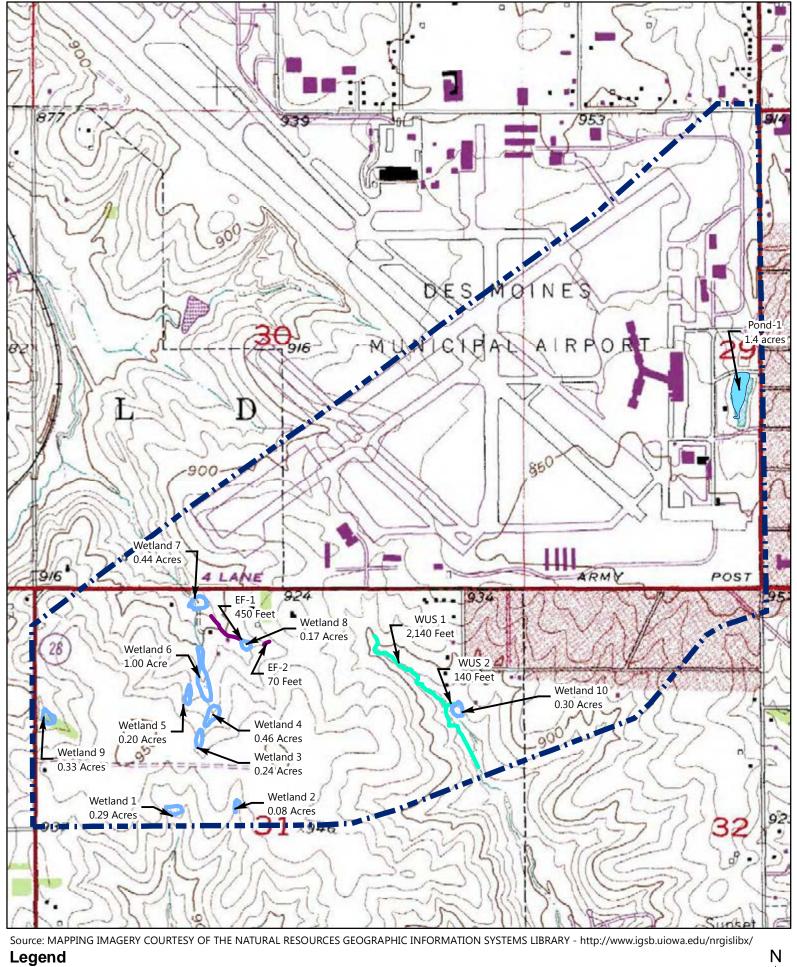
Figure 5E Wetland and WUS Delineation Map

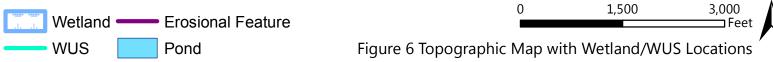


Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/









# Appendix A

# **Aerial Photographs**





0 1,500 3,000 Figure 7 2017 Aerial Mapping



Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/

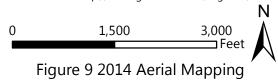


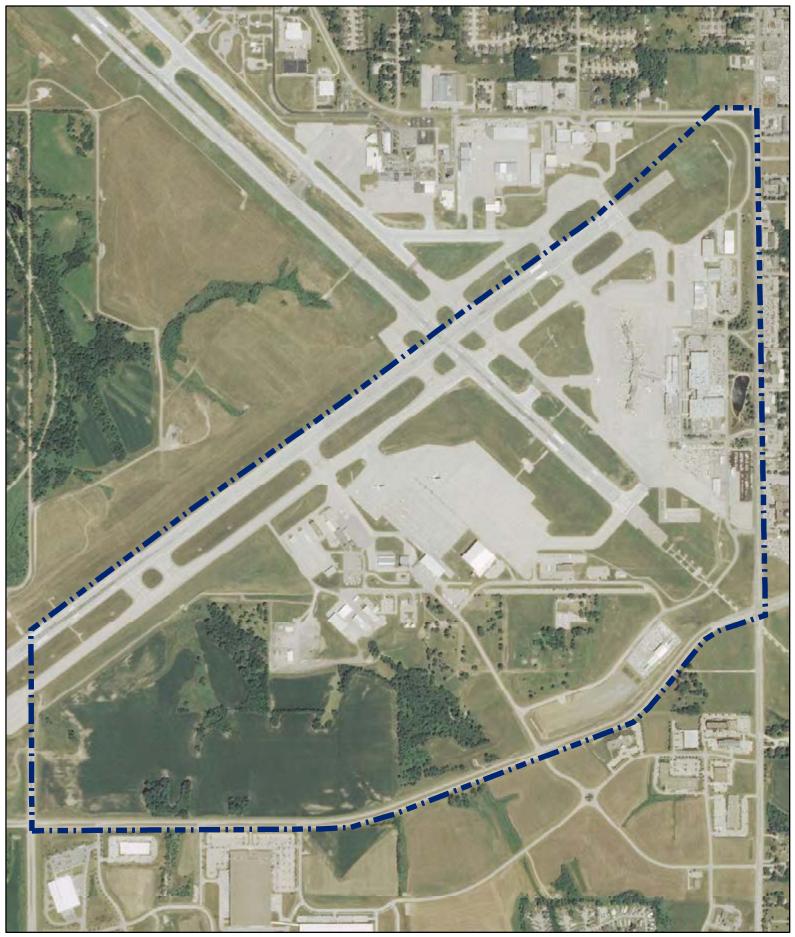
0 1,500 3,000 Feet Figure 8 2015 Aerial Mapping



Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/



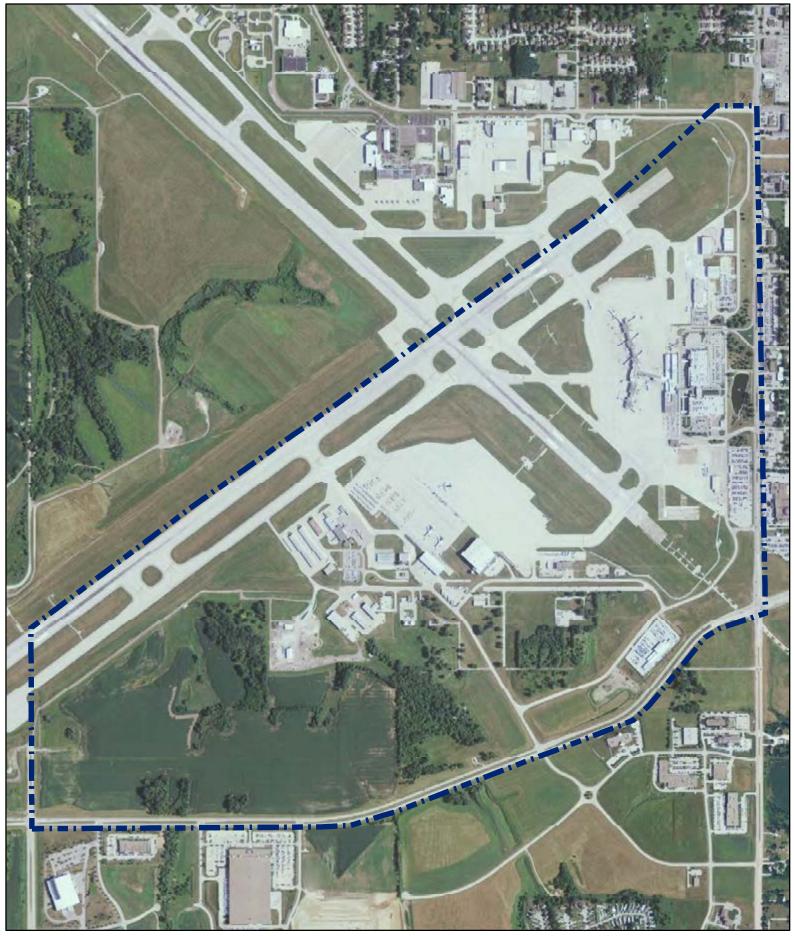




Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/

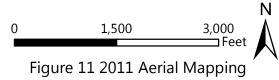






Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/

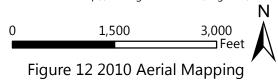


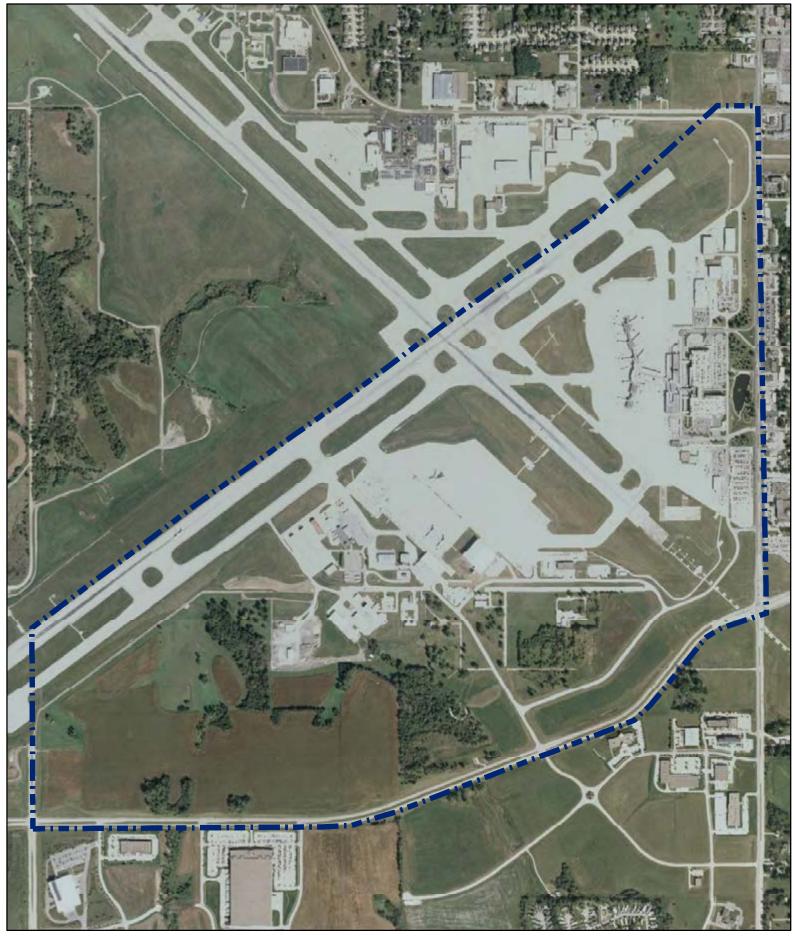




Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/

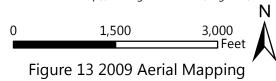






Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/

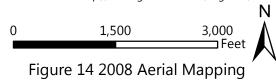






Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/

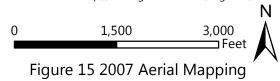






Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/







Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/

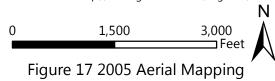


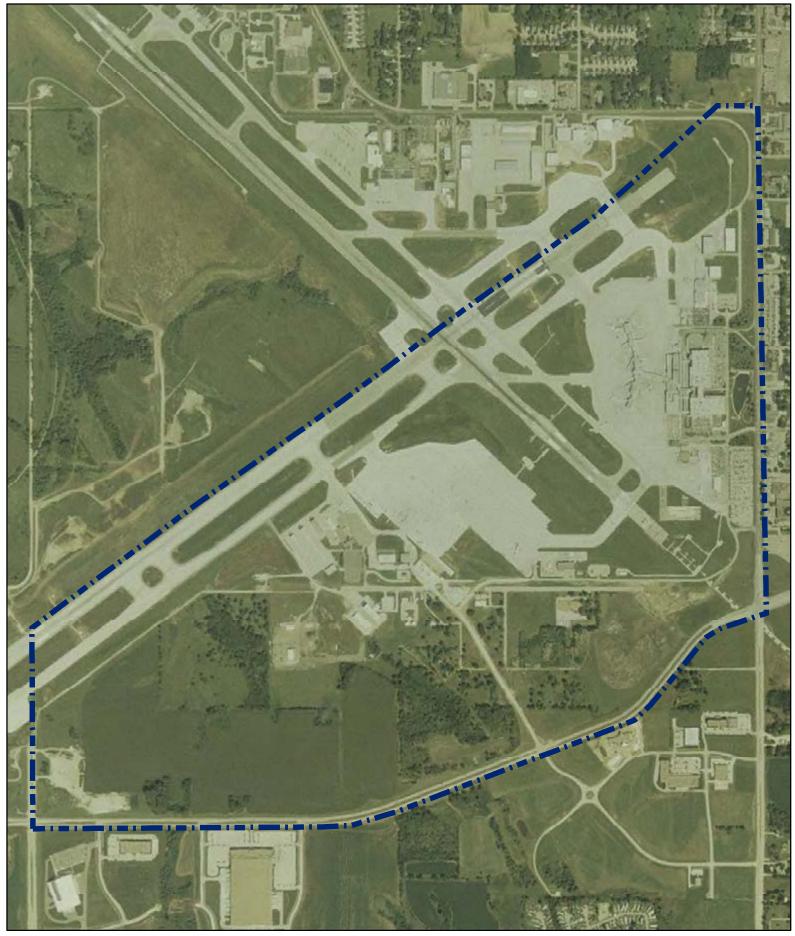
0 1,500 3,000 Feet Figure 16 2006 Aerial Mapping



Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/

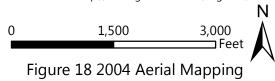


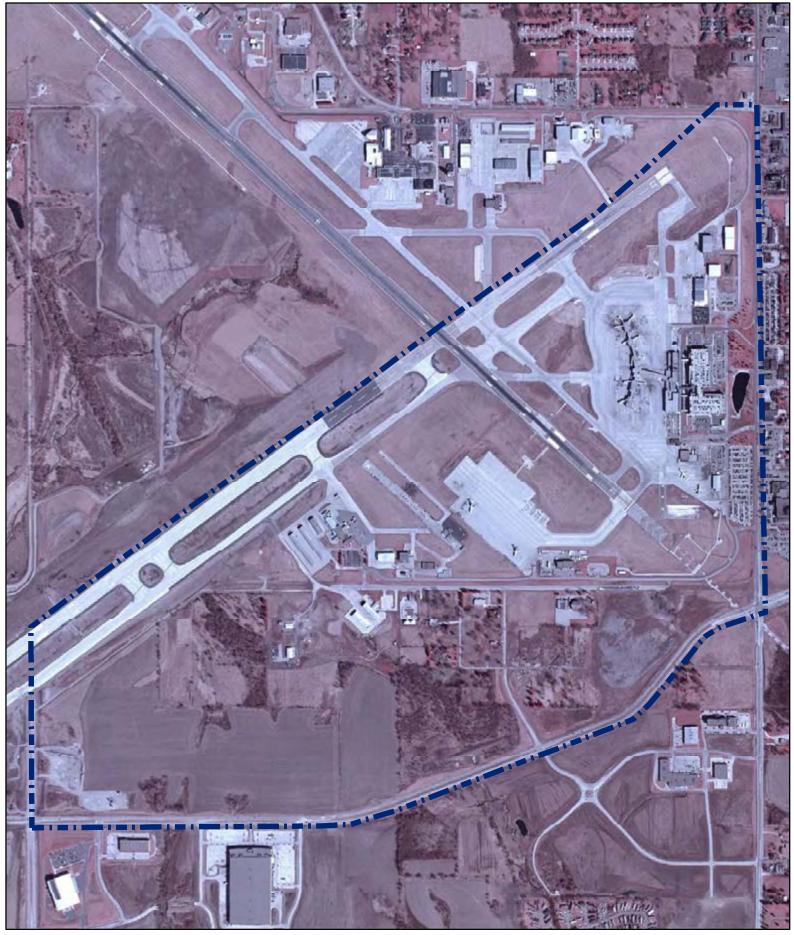




Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/

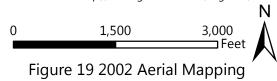


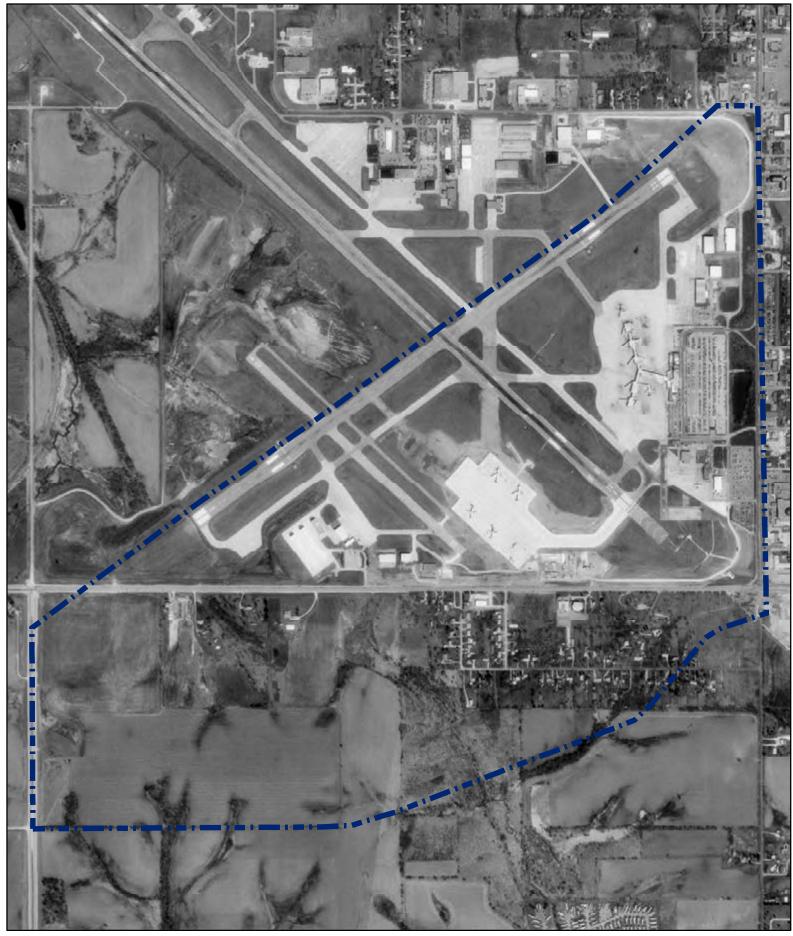




Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/



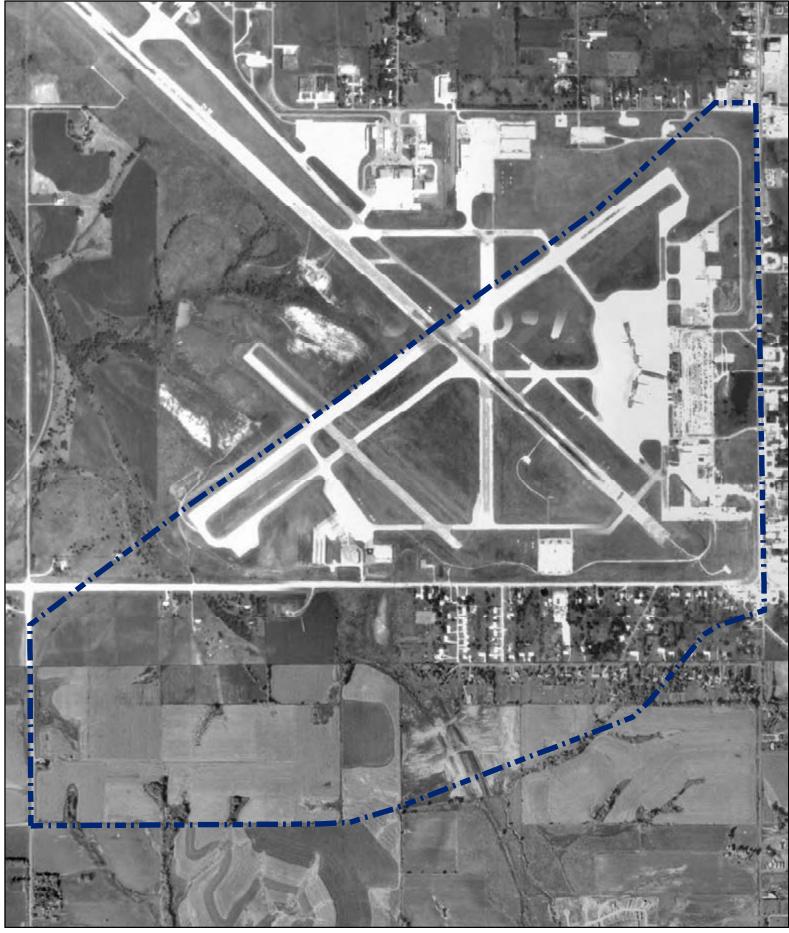




Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/

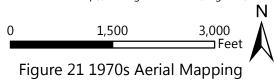


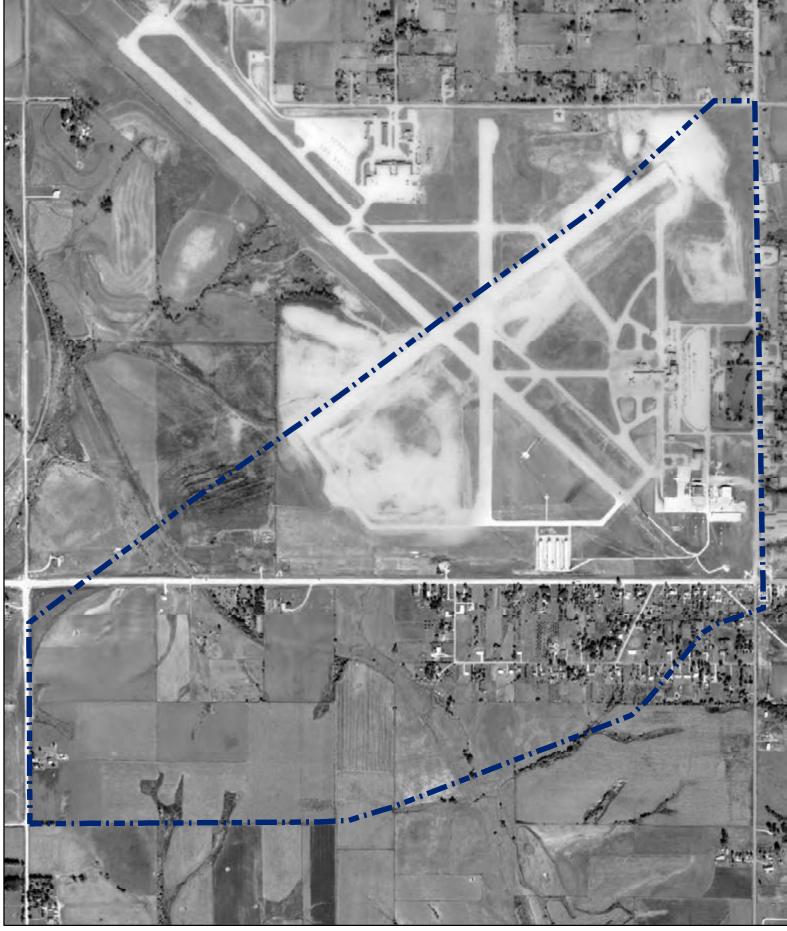
0 1,500 3,000 Feet Figure 20 1990s Aerial Mapping



Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/

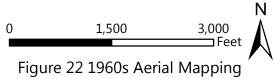


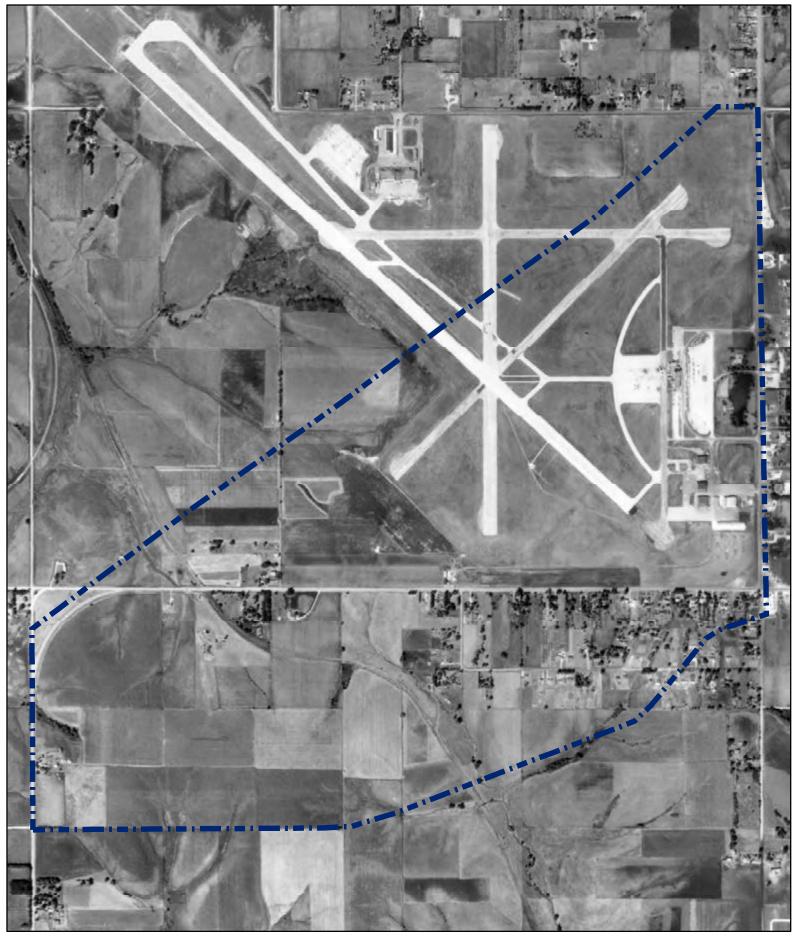




Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/







Source: MAPPING IMAGERY COURTESY OF THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY - http://www.igsb.uiowa.edu/nrgislibx/







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# Appendix B

**Wetland Determination Data Forms** 

#### WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site:	Replacement Terminal EA	City/County:	Des Moines	s/ Polk	Sampling Date:	5/8/18
Applicant/Owner:	Des Moines International Airport	t	State:	lowa	Sampling Point:	DP-1
Investigator(s):	Katie Goff	Section, Tow	nship Range:	S 29-32,	T78N, R24W	
Landform (hillslope,	terrace, etc.): Low-lying area	Local Relief (	concave, conv	vex, none):	Concave	
Slope (%): 0-5	Lat: 41.519809	Long: -93.	668397	Datum:	Wetland 1	
Soil Map Unit Name	: 11B - Colo-Judson silty clay lo	oams, occasionally flo	oded NWI	Classificat	ion: None	
Are climatic/hydrologic	conditions on the site typical for this	time of year? No,	wetter than no	ormal (see	Section 2.6)	
Are vegetation	soil or hydrology s	significantly disturbed?	Are "Normal	Circumstand	ces" present? Y	ΎΧΝ
Are vegetation	soil or hydrology	significantly problemation	c? (if needed	d, explain ar	ny answers in Rem	arks)

#### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	X X X	No No No	 Is the Sampled Area within a Wetland?	Yes _	x	No _	
Remarks:								

#### VEGETATION - Use scientific names of plants.

Tree Stratum >3" DBH (Plot size: 30' radius)	Absolute	Dominant	Indicator	Dominance Test Worksheet:		
1 Green Ash ( <i>Fraxinus pennsylvanica</i> )	<u>% Cover</u> 10	Species? Y	Status FACW	Number of Dominant Species that		
2 Eastern Cottonwood ( <i>Populus deltoids</i> )	10	Y	FAC	are OBL, FACW, or FAC (A):		
3 Sandbar Willow ( <i>Salix interior</i> )	5	Y	FACW	Total Number of Dominant Species		
4	0		17.000	Across All Strata (B):		
5				Percent of Dominant Species That		
20% Total Cover <u>5</u>	25	= Total Cov	ver	are OBL, FACW, or FAC (A/B):		
Sapling/Shrub Stratum <3" DBH or > 1 m tall (Plot s	size: 15' radi	us)		Prevalence Index Worksheet:		
1				Total % Cover of: Multiply by:		
2				OBL species X 1		
3				FACW species X 2		
4				FAC species X 3		
5				FACU species X 4		
20% Total Cover		= Total Cov	rer	UPL species X 5		
				Totals (A) (B)		
<u>Herb Stratum</u> non-woody or woody < 1 m tall (Plot s	size: 5' radiu	s)		Prevalence Index = B/A =		
1 Reed Canary Grass (Phalaris arundinacea)	100	Y	FACW	Hydrophytic Vegetation Indicators:		
<ol> <li>Reed Canary Grass (<i>Phalaris arundinacea</i>)</li> <li>Virginia Creeper (<i>Parthenocissus quinquefolia</i>)</li> </ol>	100 10	Y N	FACW FACU	Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Veg		
			-			
2 Virginia Creeper (Parthenocissus quinquefolia)			-	1-Rapid Test for Hydrophytic Veg		
<ul><li>2 Virginia Creeper (<i>Parthenocissus quinquefolia</i>)</li><li>3</li></ul>			-	1-Rapid Test for Hydrophytic Veg         X       2-Dominance Test is > 50%         3-Prevalence Index is ≤3.0 <sup>1</sup> 4-Morphological Adaptations		
<ul> <li>2 Virginia Creeper (<i>Parthenocissus quinquefolia</i>)</li> <li>3</li> <li>4</li> <li>5</li> <li>6</li> </ul>			-	1-Rapid Test for Hydrophytic Veg         X       2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations         (Provide supporting data in		
<ul> <li>2 Virginia Creeper (<i>Parthenocissus quinquefolia</i>)</li> <li>3</li> <li>4</li> <li>5</li> <li>6</li> <li>7</li> </ul>			-	1-Rapid Test for Hydrophytic Veg         X       2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations         (Provide supporting data in Remarks)		
<ul> <li>2 Virginia Creeper (<i>Parthenocissus quinquefolia</i>)</li> <li>3</li> <li>4</li> <li>5</li> <li>6</li> <li>7</li> <li>8</li> </ul>			-	1-Rapid Test for Hydrophytic Veg         X       2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations         (Provide supporting data in Remarks)         Problematic Hydrophytic		
<ul> <li>2 Virginia Creeper (<i>Parthenocissus quinquefolia</i>)</li> <li>3</li> <li>4</li> <li>5</li> <li>6</li> <li>7</li> <li>8</li> <li>9</li> </ul>			-	1-Rapid Test for Hydrophytic Veg         X       2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)		
<ul> <li>2 Virginia Creeper (<i>Parthenocissus quinquefolia</i>)</li> <li>3</li> <li>4</li> <li>5</li> <li>6</li> <li>7</li> <li>8</li> <li>9</li> <li>10</li> </ul>			-	1-Rapid Test for Hydrophytic Veg         X       2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)         1 Indicators of hydric soil and wetland		
<ul> <li>2 Virginia Creeper (<i>Parthenocissus quinquefolia</i>)</li> <li>3</li> <li>4</li> <li>5</li> <li>6</li> <li>7</li> <li>8</li> <li>9</li> <li>10</li> <li>11</li> </ul>	10	N	FACU	1-Rapid Test for Hydrophytic Veg         X       2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)         1 Indicators of hydric soil and wetland hydrology must be present, unless		
<ul> <li>2 Virginia Creeper (<i>Parthenocissus quinquefolia</i>)</li> <li>3</li> <li>4</li> <li>5</li> <li>6</li> <li>7</li> <li>8</li> <li>9</li> <li>10</li> </ul>			FACU	1-Rapid Test for Hydrophytic Veg         X       2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)         1 Indicators of hydric soil and wetland		
<ul> <li>2 Virginia Creeper (<i>Parthenocissus quinquefolia</i>)</li> <li>3</li> <li>4</li> <li>5</li> <li>6</li> <li>7</li> <li>8</li> <li>9</li> <li>10</li> <li>11</li> </ul>	10	N	FACU	1-Rapid Test for Hydrophytic Veg         X       2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)         1 Indicators of hydric soil and wetland hydrology must be present, unless		
2       Virginia Creeper (Parthenocissus quinquefolia)         3         4         5         6         7         8         9         10         11         50% Total Cover _55_ 20% Total Cover _22         Woody Vine Stratum > 1 m tall (Plot size: 30)         1	10	N	FACU	1-Rapid Test for Hydrophytic Veg         X       2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)         1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.         Hydrophytic		
2       Virginia Creeper (Parthenocissus quinquefolia)         3       4         4       5         6       7         7       8         9       9         10       11         50% Total Cover 55 20% Total Cover 22         Woody Vine Stratum > 1 m tall (Plot size: 30         1         2	10	N	FACU	1-Rapid Test for Hydrophytic Veg         X       2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)         1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.         Hydrophytic Vegetation Yes       X		
2       Virginia Creeper (Parthenocissus quinquefolia)         3       4         5       6         6       7         8       9         10       11         50% Total Cover 55 20% Total Cover 22         Woody Vine Stratum > 1 m tall (Plot size: 30         1         2         3	10	N	FACU	1-Rapid Test for Hydrophytic Veg         X       2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)         1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.         Hydrophytic		
2       Virginia Creeper (Parthenocissus quinquefolia)         3       4         4       5         6       7         7       8         9       9         10       11         50% Total Cover 55 20% Total Cover 22         Woody Vine Stratum > 1 m tall (Plot size: 30         1         2	10	N	rer	1-Rapid Test for Hydrophytic Veg         X       2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)         1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.         Hydrophytic Vegetation Yes       X		

Clients\RS & H Iowa\Replacement Terminal EA\Design\Reports\Task 8.14.1 Wetlands\Delineation\Attachments\180710\_Task 8.14.1\_Appendix B Data Forms\_Final.doc

SOIL Sampling Point: DP-1										
Profile Description: (Describe to the depth needed to document the indicator to confirm the absence of indicators.)										
Depth	Matrix	Remarks								
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	- Remarks		
0-6	10YR2/1	80	10YR4/2 10YR4/6	10 10	С	M/PL	Silty clay loam	Roots		
6-18	10YR2/1	90	10YR4/6	10	С	M/PL	Silty clay loam			
18-24	10YR3/1	90	10YR4/6	10	С	М	Silty clay loam			
17 0										
		epletion,	RM=Reduced Matrix	k, CS=C	covered of	or Coated S		2 Location: PL=Pore Lining, M=Matrix		
	<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.       2 Location: PL=Pore Lining, M=Matrix         Hydric Soil Indicators:       Indicator for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Gleyed Matrix (S4)       Coast Prairie Redox (A16)         Histic Epipedon (A2)       Sandy Redox (S5)       Iron-Manganese Masses (F12)         Black Histic (A3)       Stripped Matrix (S6)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)       Other (Explain in Remarks)         Stratified Layers (A5)       Loamy Gleyed Matrix (F3)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       X Redox Dark Surface (F6)       3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Sandy Mucky Peat or Peat (S3)       Redox Depressions (F8)       disturbed or problematic.									
	ve Layer (if obse	rved):								
Type: Depth (ind	ches):					Hydric S	oil Present?	Yes X No		
Remarks				_		-				
HYDRO	LOGY									
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Surface Water (A1)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Fauna (B13)       X       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)										
Field Observations:         Surface Water Present?       Yes       No       X       Depth:       in         Water Table Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in         Includes capillary fringe)       No       X       Depth:       in       Wetland Hydrology Present       Yes       X       No         Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Image: Colored										
	Prepared by: KRG									

Project/Site:	Replacement Terminal EA	С	ity/County:	Des Moine	es/ Polk Sampling Date: 5/8/18			
Applicant/Owner:	Des Moines International Airpo	ort		State:	Iowa Sampling Point: DP-2			
Investigator(s):	Katie Goff	S	ection, Towr	ship Range	: S 29-32, T78N, R24W			
Landform (hillslope,	terrace, etc.): Hillslope	L	ocal Relief (	concave, cor	nvex, none): Convex			
Slope (%): 0-5	Lat: 41.52			68363	Datum: Upland			
	: 11B - Colo-Judson silty clay		·	ded NW	/I Classification: None			
	conditions on the site typical for this				ormal (see Section 2.6)			
Are vegetation	soil or hydrology				Il Circumstances" present? Y X N			
Are vegetation	soil or hydrology		/ problematic		ed, explain any answers in Remarks)			
·			-	-				
		-	npling point	locations,	transects, important features, etc.			
Hydrophytic Vegetat		No	- la tha	Sompled Ar				
Hydric Soil Present?		No		Sampled Ar a Wetland?				
Wetland Hydrology F	Present? Yes	No X	-	a modulia.				
Remarks:								
VEGETATION - U	Ise scientific names of plants							
Tree Stratum >3" DBI	H (Plot size: 30' radius)	Absolute	Dominant	Indicator	Dominance Test Worksheet:			
	,	% Cover	Species?	Status				
	af Maple (Acer negundo)	40	Y	FAC	Number of Dominant Species that 3			
2 Common Hackber 3	rry (Celtis occidentalis)	30	Y	FAC	are OBL, FACW, or FAC (A):			
4					Total Number of Dominant Species 4 Across All Strata (B):			
5					Percent of Dominant Species That			
-	20% Total Cover 14	70	= Total Cov	/er	are OBL, FACW, or FAC (A/B): 75			
Sapling/Shrub Stratur	$\underline{m}$ <3" DBH or > 1 m tall (Plot	size: 15' radi	us)		Prevalence Index Worksheet:			
1					Total % Cover of: Multiply by:			
2					OBL species X 1			
3					FACW species X 2			
4					FAC species X 3			
5	20% Total Cover				FACU species X 4			
			= Total Cov	/er	UPL species X 5			
Herb Stratum non-wo	ody or woody < 1 m tall (Plot	size: 5' radiu	s)		Totals (A) (B)			
			,		Prevalence Index = B/A =			
1 hederacea)	(Ground Ivy) ( <i>Glechoma</i>	30	Y	FACU	Hydrophytic Vegetation Indicators:			
	Villy (Galium aparine)	10	N	FACU	1-Rapid Test for Hydrophytic Veg			
	Parthenocissus quinquefolia)	10	N	FACU	X 2-Dominance Test is > 50%			
4 Little Littleleaf but	tercup (Ranunculus abortivus)	10	N	FACW	3-Prevalence Index is ≤3.0 <sup>1</sup>			
5 Common Wild Vio	· · · · · · · · · · · · · · · · · · ·	10	N	FAC	4-Morphological Adaptations			
	on (Taraxacum officinale)	10	N	FACU	(Provide supporting data in			
7 White avens (Geu	ım canadense)	20	Y	FAC	Remarks)			
8 9					Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)			
10					<sup>1</sup> Indicators of hydric soil and wetland			
11					hydrology must be present, unless			
50% Total Cover	50 20% Total Cover 20	100	= Total Cov	ver	disturbed or problematic.			
Woody Vine Stratum	> 1 m tall (Plot size: 30	)' radius)						
1					Hydrophytic			
2					Vegetation Yes X No			
3					Present?			
	20% Total Cover		= Total Cov	/er				
Remarks: Vegetati	on fails the FAC-Neutral test.							

SOIL								Sampling Point: DP-2
Profile D	escription: (Desc	cribe to	the depth neede	d to do	ocument	t the indi	cator to cont	firm the absence of indicators.)
Depth	Matrix			Redo	ox Featur	es		Remarks
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Komuno
0-4	10YR3/1	90	10YR4/6	10	С	М	Silty Clay loam	
4-18	10YR2/1	98	10YR4/6	2	С	М	Silty Clay loam	
18-24	10YR2/1	100					Silty Clay loam	
17 0								
		epletion,	RM=Reduced Matrix	<u>x, CS=C</u>	covered o	r Coated S		2 Location: PL=Pore Lining, M=Matrix
	oil Indicators:		0.00					Indicator for Problematic Hydric Soils <sup>3</sup> :
	listosol (A1)	<b>`</b>			ved Matrix	x (S4)	—	Coast Prairie Redox (A16) Iron-Manganese Masses (F12)
	listic Epipedon (A2) Black Histic (A3)	)			ox (S5) atrix (S6)		—	Other (Explain in Remarks)
	lydrogen Sulfide (A	4)			ky Miner		_	
	Stratified Layers (A5				yed Matri			
	cm Muck (A10)	<i>'</i> )			latrix (F3)			
	epleted Below Dar	k Surfac			< Surface			
	hick Dark Surface				ark Surfa			<sup>3</sup> Indicators of hydrophytic vegetation and
	Sandy Mucky Miner				ressions			wetland hydrology must be present, unless
	cm Mucky Peat or			on Dop		()		disturbed or problematic.
Restrictive Layer (if observed):								
Type:	ve Layer (il obse	rveu).						
Depth (inches): Hydric Soil Present? Yes X No								
Remarks:						,		
HYDRO	LOGY							
Wetland	Hydrology Indica	ators:						
			is required; check a	all that a	(vlaa		Sec	condary Indicators (minimum of 2 required)
	Surface Water (A1)				ned Leav	es (B9)		Surface Soil Cracks (B6)
	ligh Water Table (A	2)			una (B13			Drainage Patterns (B10)
	Saturation (A3)	,			ic Plants			Dry-Season Water Table (C2)
V	Vater Marks (B1)		Hyd	rogen S	Sulfide O	dor (C1)		Crayfish Burrows (C8)
S	ediment Deposits (	(B2)	Oxid	ized Rhiz	ospheres o	on Living Ro	ots (C3)	Saturation Visible on Aerial Imagery (C9)
	Prift Deposits (B3)		Pres	sence o	f Reduce	ed Iron (C4	1)	Stunted or Stressed Plants (D1)
Α	Igal Mat or Crust (	34)				on Tilled S	oil (C6)	Geomorphic Position (D2)
	on Deposits (B5)				Surface (	. ,		FAC-Neutral Test (D5)
	nundation Visible on A			-	Vell Data			
S	parse Vegetated Con	cave Sur	face(B8) Othe	er (Expl	ain in Re	emarks)		
Field Ob	servations:							
Surface V	Vater Present?	Yes	No X D	epth:		in		
Water Tal	ble Present?	Yes	No X D	epth:		in		
Saturation	n Present?	Yes	<u> </u>	epth:		in We	tland Hydrolo	ogy Present Yes <u>No X</u>
	capillary fringe)							
Describe	Recorded Data (str	eam ga	uge, monitoring wel	I, aerial	photogra	aphs, prev	ious inspectio	ons), if available:
Remarks:								
. tornunto.								

Prepared by:	KRG
Checked by:	ESM

Project/Site:	Replacement Terminal EA	(	City/County:	Des Moine	es/ Polk Sampling Date: 5/8/18			
Applicant/Owner:	Des Moines International Airpo	rt		State:	Iowa Sampling Point: DP-3			
Investigator(s):	Katie Goff	5	Section, Towr	nship Range	: S 29-32, T78N, R24W			
Landform (hillslope,	terrace, etc.): Low-lying area	L	Local Relief (concave, convex, none): Concave					
Slope (%): 9-14	Lat: 41.520019	L	.ong: -93.6	666	Datum: Wetland 2			
Soil Map Unit Name	: 76D2 - Ladoga silty clay loan	n, eroded		NW	/I Classification: None			
	conditions on the site typical for this		r? No. \	wetter than r	normal (see Section 2.6)			
Are vegetation	soil or hydrology	-	y disturbed?		al Circumstances" present? Y X N			
Are vegetation	soil or hydrology	-	y problematic		ed, explain any answers in Remarks)			
		-						
			mpling point	t locations,	transects, important features, etc.			
Hydrophytic Vegetat		No	Is the	Sampled Ar				
Hydric Soil Present? Wetland Hydrology				a Wetland?				
	Present? Yes X	No	_					
Remarks:								
VEGETATION - I	Jse scientific names of plants.							
		Absolute	Dominant	Indicator	<b>_</b> . <b>_</b>			
Tree Stratum >3" DB	H (Plot size: 30' radius)	% Cover	Species?	Status	Dominance Test Worksheet:			
	ood (Populus deltoids)	20	Y	FAC	Number of Dominant Species that			
2 Sandbar Willow (	,	30	Y	FACW	are OBL, FACW, or FAC (A):			
	af Maple ( <i>Acer negundo</i> )	10	N	FAC	Total Number of Dominant Species 4			
4			-		Across All Strata (B):			
5	20% Total Cover 12	60	– Total Ca		Percent of Dominant Species That are OBL, FACW, or FAC (A/B): 100			
		60	= Total Cov	/er				
Sapling/Shrub Stratu	$\underline{m}$ <3" DBH or > 1 m tall (Plot s	size: 15' rad	lius)		Prevalence Index Worksheet:			
1					Total % Cover of: Multiply by:			
2					OBL species X 1			
3					FACW species X 2			
4					FAC species X 3			
5					FACU species X 4			
	20% Total Cover		= Total Cov	ver	UPL species X 5			
		ing, <b>F</b> <sup>2</sup> and is			Totals (A) (B)			
Herb Stratum non-wo	ody or woody < 1 m tall (Plot s	size: 5' radiu	us)		Prevalence Index = B/A =			
1 Reed Canary Gra	ss (Phalaris arundinacea)	80	Y	FACW	Hydrophytic Vegetation Indicators:			
	Parthenocissus quinquefolia)	10	N	FACU	1-Rapid Test for Hydrophytic Veg			
3 Stinging Nettle (L	Irtica dioica)	10	N	FACW	X 2-Dominance Test is > 50%			
4					3-Prevalence Index is ≤3.0 <sup>1</sup>			
5					4-Morphological Adaptations			
6 7					(Provide supporting data in Remarks)			
8					Problematic Hydrophytic			
9					Vegetation <sup>1</sup> (Explain)			
10					<sup>1</sup> Indicators of hydric soil and wetland			
11					hydrology must be present, unless			
50% Total Cover	50 20% Total Cover 50	100	= Total Cov	/er	disturbed or problematic.			
Woody Vine Stratum	> 1 m tall (Plot size: 30	' radius)						
1 River-Bank Grape	e (Vitis riparia)	10	Y	FACW	Hydrophytic			
2					Vegetation Yes X No			
3					Present?			
	20% Total Cover 2	10	= Total Cov	ver				
Remarks: Vegetat	ion passes the FAC-Neutral test.							

SOIL								Sampling Point: DP-3	
Profile D	escription: (Desc	cribe to	the depth neede				dicator to con	firm the absence of indicators.)	
Depth	Matrix				ox Featur	res		Remarks	
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Kendika	
0-6	10YR2/1	90	10YR4/6	10	С	М	Silty clay loam		
6-22	10YR3/1	95	10YR4/6	5	С	М	Silty clay loam		
							louin		
<sup>1</sup> Type: C=	Concentration D=D	enletion	RM=Reduced Matri	CS=C	Covered o	r Coated	Sand Grains	2 Location: PL=Pore Lining, M=Matrix	
Hydric S 	<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.       2 Location: PL=Pore Lining, M=Matrix         Hydric Soil Indicators:       Indicator for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Gleyed Matrix (S4)         Histic Epipedon (A2)       Sandy Redox (S5)         Black Histic (A3)       Stripped Matrix (S6)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Loamy Gleyed Matrix (F2)         2 cm Muck (A10)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Thick Dark Surface (A12)       Depleted Dark Surface (F7)								
	Sandy Mucky Mineral (S1) Redox Depressions (F8) wetland hydrology must be present, unless								
Restrictive Layer (if observed):         Type:         Depth (inches):         Hydric Soil Present?         Yes         X									
• •	· -			_		i iyane c	Son Present:		
Remarks									
	1.00%								
HYDRO									
Primary III 	Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Fauna (B13)       X       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       X       FAC-Neutral Test (D5)         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)       X       FAC-Neutral Test (D5)								
	servations:	Vaa		onth:		in			
	Vater Present? ble Present?	Yes Yes		epth: epth:		in in			
	n Present?	Yes		epth:		-	/etland Hydrol	ogy Present Yes X No	
	capillary fringe)	100				•			
		ream qa	uge, monitoring wel	I, aeria	l photoar	aphs, pr	evious inspecti	ons), if available:	
		5.				1 17.		··	
Remarks	Two or more se	econdar	y wetland indicators	were o	observed	; therefo	re wetland hydr	rology is present.	
								Prepared by: KRG Checked by: ESM	

Project/Site:	Replacement Terminal EA	(	City/County:	Des Moine	es/ Polk	Sampling Date:	5/8/18	
Applicant/Owner:	Des Moines International Airpo	ort		State:	lowa	Sampling Point:	DP-4	
Investigator(s):	Katie Goff		Section, Towr	ship Range	: S 29-32,	T78N, R24W		
Landform (hillslope,	terrace, etc.): Hillslope	L	_ocal Relief (o	concave, cor	nvex, none):	Convex		
Slope (%): 9-14	Lat: 41.520137	L	_ong: -93.6	65977	Datum:	Upland		
Soil Map Unit Name	: 76D2 - Ladoga silty clay loar	m, eroded		NW	/I Classificati	on: None		
Are climatic/hydrologic	conditions on the site typical for this	s time of yea	ır? No, ۱	wetter than n	ormal (see S	Section 2.6)		
Are vegetation	soil or hydrology	significant	ly disturbed?		I Circumstance	,	ΥXΝ	
Are vegetation	soil or hydrology	-	ly problematic			y answers in Rem		
	NDINGS – Attach site map s	-			•	•	,	
Hydrophytic Vegetat		No		liocations,			,0,000	
Hydric Soil Present?		No	ls the	Sampled Ar	ea Yes		No X	
Wetland Hydrology		No X		a Wetland?		·		
Remarks:			_					
Remarks.								
VEGETATION - U	Jse scientific names of plants	•						
Tree Stratum >3" DB	H (Plot size: 30' radius)	Absolute	Dominant	Indicator	Dominance	e Test Worksheet		
		% Cover	Species?	Status			-	
	af Maple (Acer negundo)	10	Y	FAC		Dominant Species	that 4	۱.
2 American Elm (Un 3	mus Americana)	20	Y	FACW		ACW, or FAC (A):		
4					Across All S	er of Dominant Sp Strata (B) <sup>.</sup>	5 5 Secies	5
5						Dominant Species	That	
•	20% Total Cover 6	30	= Total Cov	/er		CW, or FAC (A/E		0
						, , , , , , , , , , , , , , , , , , ,		
Sapling/Shrub Stratur	$\underline{m}$ <3" DBH or > 1 m tall (Plot	size: 15' rac	lius)		Prevalence	Index Workshee	et:	
1					Total % (	Cover of:	Multiply by:	
2					OBL species			
3					FACW speci			
4					FAC species	x X	3	
5					FACU specie			
	20% Total Cover		= Total Cov	ver	UPL species	X	5	
Llark Stratum non wa		oizo, E' rodi			Totals (	(A) (E	3)	
Herb Stratum non-wo	oody or woody < 1 m tall (Plot	size: 5' radi	us)		Prevale	nce Index = B/A	=	
	ss (Phalaris arundinacea)	20	Y	FACW	Hydrophyti	c Vegetation Ind	icators:	
2 Stinging Nettle (L		20	Y	FACW		apid Test for Hydro		1
3 Common Wild Vid		30	Y	FAC		ominance Test is :		
	Nilly (Galium aparine)	10	N	FACU		evalence Index is		
5						orphological Adap		
6 7						vide supporting da arks)	ala m	
8						elematic Hydrophy	tic	
9						etation <sup>1</sup> (Explain)		
10					-	of hydric soil and		
11						nust be present, u		
50% Total Cover	40 20% Total Cover 16	80	= Total Cov	ver		problematic.		
Woody Vine Stratum	> 1 m tall (Plot size: 30	)' radius)						
1					Hydrophyt	ic		
2					Vegetation	n Yes <u>X</u>	No	
3					Present?			
	20% Total Cover	l	= Total Cov	ver				
Remarks: Vegetat	ion passes the FAC-Neutral test.							

SOIL								Sampling Point: DP-4	ł	
Profile Description: (Describe to the depth needed to document the indicator to confirm the absence of indicators.)										
Depth	Matrix			Redo	ox Featu	ires		Remarks		
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture			
0-20	10YR3/1	98	10YR4/6	2	С	М	Silty clay			
							loam			
		epletion,	RM=Reduced Matrix	x, CS=C	overed o	or Coated S	and Grains.	2 Location: PL=Pore Lining, M=Matrix	3.	
	oil Indicators: listosol (A1)		San	dv Glev	ed Matr	iv (S4)		Indicator for Problematic Hydric Soils Coast Prairie Redox (A16)		
	listic Epipedon (A2	)		dy Red		IX (0 <del>4</del> )	-	Iron-Manganese Masses ( F12)		
	Black Histic (A3)	/			atrix (S6	5)	-	Other (Explain in Remarks)		
	lydrogen Sulfide (A	4)				eral (F1)	-			
	Stratified Layers (A5				ed Mat					
	cm Muck (A10)	,			atrix (F3					
	Depleted Below Dar	k Surfac	ce (A11) X Red	ox Dark	Surfac	e (F6)				
ΤΤ	hick Dark Surface	( A12)				ace (F7)		<sup>3</sup> Indicators of hydrophytic vegetation and		
	andy Mucky Miner			ox Dep	ressions	s (F8)		wetland hydrology must be present, unless	i	
5	cm Mucky Peat or	Peat (S	53)					disturbed or problematic.		
Restricti	Restrictive Layer (if observed):									
Type:	Type:									
Depth (ind	Depth (inches): Hydric Soil Present? Yes X No									
Remarks:										
HYDRO	LOGY									
Wetland	Hydrology Indica	ators:								
			is required; check a	all that a	pply)		Se	econdary Indicators (minimum of 2 required)		
S	Surface Water (A1)		Wat	er-Stair	ned Leav	ves (B9)		Surface Soil Cracks (B6)		
	ligh Water Table (A	42)			una (B13			Drainage Patterns (B10)		
S	Saturation (A3)		True	e Aquati	ic Plants	s (B14)		Dry-Season Water Table (C2)		
	Vater Marks (B1)					Odor (C1)		Crayfish Burrows (C8)		
	ediment Deposits	(B2)				on Living Ro		_ Saturation Visible on Aerial Imagery (C9)		
	Prift Deposits (B3)					ed Iron (C4		Stunted or Stressed Plants (D1)		
	Igal Mat or Crust (I	B4)				n on Tilled S		Geomorphic Position (D2)		
	on Deposits (B5)				Surface		<u></u> X	FAC-Neutral Test (D5)		
	nundation Visible on A			0	/ell Data	· · ·				
	parse Vegetated Con	icave Sul		er (Expl	ain in R	emarks)				
	servations:									
	Vater Present?	Yes		epth:		in				
	ble Present?	Yes _		epth:		_ in	()			
	Present?	Yes	No <u></u> D	epth:		_ in   We	tland Hydrol	ogy Present Yes <u>No X</u>	-	
	capillary fringe)	nam an	uge, monitoring wel	l parial	nhotog	ranhe prov	ious insporti	ons) if available:		
Describe	Necolueu Data (Sti	can ya	uye, monitoring we	ii, aciidi	priorog	apris, prev		0113, 11 availabic.		
Remarks:										
								Design the KDO		
								Prepared by: KRG		
								Checked by: <u>ESM</u>		

Project/Site:	Replacement Terminal EA	C	ity/County:	Des Moine	es/ Polk Samp	oling Date: 5/8/	18
Applicant/Owner:	Des Moines International Airpo	ort		State:	lowa Samp	ling Point: DP-	5
Investigator(s):	Katie Goff	S	ection, Towr	ship Range	: S 29-32, T78N	I, R24W	
Landform (hillslope,	terrace, etc.): Low-lying area	L	ocal Relief (d	concave, cor	nvex, none): Co	ncave	
Slope (%): 2-5	Lat: 41.521969	L	ong: -93.6	67519	Datum: We	etland 3	
Soil Map Unit Name	: 370B - Sharpsburg silty clay	loam		NW	/I Classification:	None	
-	conditions on the site typical for this		? No. v	wetter than n	ormal (see Sectio	n 2.6)	
Are vegetation	soil or hydrology	-	y disturbed?		Il Circumstances" pro	-	N
Are vegetation	soil or hydrology		, y problematic		ed, explain any ans		
				-			
	NDINGS – Attach site map s		npling point	locations,	transects, import	lant features, etc	
Hydrophytic Vegetat		No	_ ls tho	Sampled Ar	02 1/		
Hydric Soil Present?		No		a Wetland?		<u>X</u> No _	
Wetland Hydrology I	Present? Yes X	No	-				
Remarks:							
	les scientifis nomes of plants						
	Ise scientific names of plants		Dominant	Indicator	l		
Tree Stratum >3" DBI	H (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test	Worksheet:	
1 Sandbar Willow (	Salix interior)	20	Y	FACW	Number of Domin	ant Species that	
	od (Populus deltoids)	15	Y	FAC	are OBL, FACW,		3
3 Box Elder/Ash-Le	af Maple (Acer negundo)	5	N	FAC	Total Number of [	Dominant Species	3
4					Across All Strata		
5					Percent of Domin		100
	20% Total Cover 8	40	= Total Cov	ver	are OBL, FACW,	or FAC (A/B):	
Sapling/Shrub Stratur	$\underline{m}$ <3" DBH or > 1 m tall (Plot	size: 15' rad	ius)		Prevalence Inde	x Worksheet:	
1					Total % Cover	<u>of:</u> <u>Multipl</u>	v bv:
2					OBL species	X 1	
3					FACW species	X 2	
4					FAC species	X 3	
5					FACU species	X4	
	20% Total Cover		= Total Cov	/er	UPL species	X 5	
Herb Stratum non-wo	ody or woody < 1 m tall (Plot	size: 5' radiu	ie)		Totals (A)	(B)	
	, , , , , , , , , , , , , , , , , , ,		,		Prevalence I		
	ss (Phalaris arundinacea)	100	Y	FACW		etation Indicator	
2 Stinging Nettle (U	Irtica dioica)	15	N	FACW		est for Hydrophytic	c Veg
3 4						nce Test is > 50% nce Index is $\leq 3.0^1$	
5						logical Adaptations	
6						supporting data in	<b>b</b>
7					Remarks)		
8					Problemat	tic Hydrophytic	
9					Vegetation	n <sup>1</sup> (Explain)	
10			ļ			dric soil and wetlar	ld
11	50 000/ T / LO 00				hydrology must be	e present, unless	
50% Total Cover	56 20% Total Cover 23	115	= Total Cov	ver	disturbed or probl		
Woody Vine Stratum	> 1 m tall (Plot size: 30	)' radius)	1				
1					Hydrophytic		
2 3					Vegetation Yesent?	Yes <u>X</u> No	
J	20% Total Cover		- Tetal O		i resent:		
Demender M. (1)			= Total Cov	rer			
Remarks: Vegetati	ion passes the FAC-Neutral test.						

SOIL Brofile D	econintion (Dec	ariba ta	the denth needs	d 40 d		at the ind	inctor to com	Sampling Point: DP-5		
		cribe to	the depth heede				icator to con	firm the absence of indicators.)		
Depth	Matrix	0/			ox Featu		Tartura	Remarks		
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Silty Clay			
0-18	10YR3/1	80	10YR4/6	20	С	М	Loam			
18-24	10YR3/1	75	10YR4/6	25	С	М	Silty Clay Loam	Redox Concentrations (Manganese)		
<sup>1</sup> Tvpe: C=	Concentration, D=De	epletion.	RM=Reduced Matrix	c CS=C	Covered	or Coated S	Sand Grains.	2 Location: PL=Pore Lining, M=Matrix		
	oil Indicators:	<u>opie</u> ,		.,				Indicator for Problematic Hydric Soils <sup>3</sup> :		
	listosol (A1)		San	dy Gley	ed Mat	rix (S4)		Coast Prairie Redox (A16)		
	listic Epipedon (A2)	)			ox (S5)			Iron-Manganese Masses (F12)		
E	Black Histic (A3)		Strip	ped Ma	atrix (Se	6)	_	Other (Explain in Remarks)		
	lydrogen Sulfide (A					eral (F1)				
	Stratified Layers (A5	5)			yed Mat					
	cm Muck (A10)				latrix (F					
	Depleted Below Dar									
	hick Dark Surface					face (F7)		<sup>3</sup> Indicators of hydrophytic vegetation and		
Sandy Mucky Mineral (S1) Redox Depressions (F8) wetland hydrology must be present, unless										
5 cm Mucky Peat or Peat (S3) disturbed or problematic.										
	Restrictive Layer (if observed): Type:									
Depth (inches): Hydric Soil Present? Yes X No										
Remarks: Manganese concretions										
HYDRO	LOGY									
Wetland	Hydrology Indica	ators:								
		of one	is required; check a	II that a	apply)		Se	condary Indicators (minimum of 2 required)		
	Surface Water (A1)					ves (B9)		Surface Soil Cracks (B6)		
	ligh Water Table (A	(2)			una (B1		X	0 ( )		
	Saturation (A3)				ic Plants			Dry-Season Water Table (C2)		
	Vater Marks (B1)			-		Odor (C1)		Crayfish Burrows (C8)		
	Sediment Deposits (	(B2)			-	s on Living Ro	· · · ·	Saturation Visible on Aerial Imagery (C9)		
	Prift Deposits (B3)					ed Iron (C		Stunted or Stressed Plants (D1)		
	Igal Mat or Crust (E	34)				n on Tilled S		Geomorphic Position (D2)		
	on Deposits (B5) nundation Visible on A	orial Ima			Surface	· · ·	X	FAC-Neutral Test (D5)		
	parse Vegetated Con		<u> </u>		Vell Data Iain in R	a (D9) Remarks)				
	servations:			21 (Evh						
	Vater Present?	Voc		onth		in				
	ble Present?	Yes Yes		epth: epth:		_ in in				
	n Present?	Yes		epth:			etland Hydrolo	ogy Present Yes X No		
	capillary fringe)	.00				***		<u> </u>		
		ream ga	uge, monitoring wel	l, aeria	l photog	raphs, pre	vious inspectio	ons), if available:		
Remarks:	Two or more se	econdar	y wetland indicators	were o	observe	d; therefore	e wetland hydr	ology is present.		
								-		
								Prepared by: KRG		

Prepared by:	KRG
Checked by:	ESM

Project/Site:	Replacement Terminal EA	(	City/County:	Des Moine	es/ Polk Sampling Date: 5/8/18	
Applicant/Owner:	Des Moines International Airpo	ort		State:	Iowa Sampling Point: DP-6	
Investigator(s):	Katie Goff		Section, Towr	iship Range	: <u>S 29-32, T78N, R24W</u>	
Landform (hillslope,	terrace, etc.): Hillslope	L	ocal Relief (	concave, cor	nvex, none): Convex	
Slope (%): 9-14	Lat: 41.521925	L	_ong: -93.6	67352	Datum: Upland	
Soil Map Unit Name	: 822D2 - Lamoni silty clay lo	am, modera	ately eroded	NW	/I Classification: None	
	conditions on the site typical for thi		-	vetter than r	normal (see Section 2.6)	
Are vegetation	soil or hydrology		ly disturbed?		al Circumstances" present? Y X N	
Are vegetation	soil or hydrology		y problematic		ed, explain any answers in Remarks)	
					· · · · · · · · · · · · · · · · · · ·	
Hydrophytic Vegetat		No		liocations,	transects, important features, etc.	
Hydric Soil Present?		No	Is the s	Sampled Ar	ea Yes No X	,
Wetland Hydrology I		No X		a Wetland?		<u> </u>
		<u></u>	—			
Remarks:						
VEGETATION - U	Ise scientific names of plants					
Tree Stratum >3" DB	H (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1 Sandbar Willow (	Salix interior)	20	Y	FACW	Number of Dominant Species that	•
2 Silky Dogwood (C	,	20	Y	FACW	are OBL, FACW, or FAC (A):	3
3					Total Number of Dominant Species	3
4					Across All Strata (B):	5
5					Percent of Dominant Species That	00
	20% Total Cover 8	40	= Total Cov	ver	are OBL, FACW, or FAC (A/B):	
Sapling/Shrub Stratur	$\underline{m}$ <3" DBH or > 1 m tall (Plot	size: 15' rad	lius)		Prevalence Index Worksheet:	
1					Total % Cover of: Multiply by	<u>.</u>
2					OBL species X 1	
3					FACW species X 2	
4					FAC species X 3	
5					FACU species X 4	
	20% Total Cover		= Total Cov	rer	UPL species X 5	
Herb Stratum non-wo	ody or woody < 1 m tall (Plot	size: 5' radii	us)		Totals (A) (B)	
	, , , , , , , , , , , , , , , , , , ,		,	54014	Prevalence Index = B/A =	
	ss (Phalaris arundinacea)	100	Y	FACW	Hydrophytic Vegetation Indicators:	
2 Tall Goldenrod (S 3 Common Wild Vid	<b>o</b> /	20 10	N	FACU FAC	1-Rapid Test for Hydrophytic Veg	g
3 Common Wild Vic 4	liet (Viola sololia)	10	IN	FAC	X 2-Dominance Test is > 50% 3-Prevalence Index is ≤3.0 <sup>1</sup>	
5					4-Morphological Adaptations	
6					(Provide supporting data in	
7					Remarks)	
8					Problematic Hydrophytic	
9					Vegetation <sup>1</sup> (Explain)	
10					<sup>1</sup> Indicators of hydric soil and wetland	
11					hydrology must be present, unless	
50% Total Cover	65 20% Total Cover 26	130	= Total Cov	ver	disturbed or problematic.	
Woody Vine Stratum	> 1 m tall (Plot size: 30	0' radius)				
1					Hydrophytic	
2 3					Vegetation Yes <u>X</u> No Present?	
5	20% Total Cover		- Total Car			
Domarka: Vasciat		1	= Total Cov			
Remarks: Vegetat	on passes the FAC-Neutral test.					

SOIL									Sampling	
		cribe to	the depth neede				icator to con	firm the abse	nce of indi	cators.)
Depth	Matrix	-			ox Featur			4	Remark	S
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture			-
0-6	10YR2/1	98	10YR4/6	2	С	М	Silty Clay loam			
0.00	10YR3/1	60					Silty Clay			
6-22	10YR4/2	40					loam			
17	Ormania anti-		DM. De due e d Meter						Dens Lining	. M. Mastein
		epletion,	RM=Reduced Matr	x, CS=C	Covered o	or Coated S	Sand Grains.	2 Location: P		
	oil Indicators:		Sor		ad Matri	× (C1)			irie Redox (A	ic Hydric Soils <sup>3</sup> :
	listosol (A1) listic Epipedon (A2	`			/ed Matri ox (S5)	x (34)	-		anese Mass	
	Black Histic (A3)	)			atrix (S6)	\	-		plain in Rema	
	lydrogen Sulfide (A	(4)			cky Miner		-			di K3)
	Stratified Layers (A5				yed Matri					
	cm Muck (A10)	-)			latrix (F3					
	epleted Below Dar	k Surfa			k Surface					
	hick Dark Surface				ark Surfa			<sup>3</sup> Indicators of	hvdrophytic	vegetation and
S	andy Mucky Miner	al (S1)			ressions					present, unless
5	cm Mucky Peat or	Peat (S	53)					disturbed or pr	oblematic.	
Restricti	Restrictive Layer (if observed):									
Type:	Type:									
Depth (ind	ches):				1	Hydric S	oil Present?	Yes	X No	D
Remarks:						-				
rtomanto.										
HYDRO	LOGY									
Wetland	Hydrology Indica	ators:								
			is required; check	all that a	(vlaa		Se	condary Indica	tors (minimu	m of 2 required)
	Surface Water (A1)		Wa	ter-Stair	ned Leav	ves (B9)	<u></u>	Surface Soil		
	ligh Water Table (A	A2)			una (B13			Drainage Pa		
	Saturation (A3)	,			ic Plants			Dry-Season		(C2)
	Vater Marks (B1)		Hyc	Irogen §	Sulfide O	dor (Ć1)		Crayfish Bur		
	Sediment Deposits	(B2)	Oxic	ized Rhiz	cospheres	on Living Ro	oots (C3)	Saturation V	isible on Aer	ial Imagery (C9)
	Prift Deposits (B3)		Pre	sence c	of Reduce	ed Iron (C	(4)	Stunted or S	tressed Plan	ts (D1)
A	Igal Mat or Crust (I	B4)	Rec	ent Iron	Reduction	on Tilled S	· · ·	Geomorphic		2)
II	on Deposits (B5)				Surface (	• •	X	FAC-Neutral	Test (D5)	
	nundation Visible on A				Vell Data					
S	parse Vegetated Con	icave Su	rface(B8) Oth	er (Exp	lain in Re	emarks)				
Field Ob	servations:									
Surface V	Vater Present?	Yes		epth:		in				
	ble Present?	Yes		epth:		in				
	n Present?	Yes	<u>No X</u> E	epth:		in We	etland Hydrol	ogy Present	Yes	<u>No X</u>
	capillary fringe)									
Describe	Recorded Data (str	ream ga	uge, monitoring we	II, aeria	I photogr	aphs, pre	evious inspection	ons), if availabl	e:	
Remarks:										
										ared by: KRG
									Chec	ked by: ESM

Project/Site:	Replacement Terminal EA	C	ity/County:	Des Moine	nes/ Polk Sampling Date: 5/8/18		
Applicant/Owner:	Des Moines International Airpo	ort		State:	Iowa Sampling Point: DP-7		
Investigator(s):	Katie Goff	S	ection, Towr	ship Range	: S 29-32, T78N, R24W		
Landform (hillslope,	terrace, etc.): Low-lying area	L	ocal Relief (o	concave, cor	ivex, none): Concave		
Slope (%): 9-14	Lat: 41.522591	L	ong: -93.6	67119	Datum: Wetland 4		
Soil Map Unit Name	: 370D2 - Sharpsburg silty cla	ay loam, ero	ded	NW	/I Classification: None		
-	conditions on the site typical for this	-		wetter than n	ormal (see Section 2.6)		
Are vegetation	soil or hydrology	-	/ disturbed?		Il Circumstances" present? Y X N		
Are vegetation	soil or hydrology		problematic		ed, explain any answers in Remarks)		
			-	-			
			nping point	l locations,	transects, important features, etc.		
Hydrophytic Vegetat Hydric Soil Present?		No <u> </u>	ls the s	Sampled Ar	ea <sub>Yes</sub> X No		
Wetland Hydrology I		No		a Wetland?			
		<u> </u>	-				
Remarks:							
VEGETATION - L	Ise scientific names of plants						
Tree Stratum >3" DB	H (Plot size: 30' radius)	Absolute	Dominant	Indicator	Dominance Test Worksheet:		
	,	% Cover	Species?	Status			
1 Sandbar Willow (	,	20	Y	FACW	Number of Dominant Species that		
<ul><li>2 Eastern Cottonwo</li><li>3 Honey Locust (Gl</li></ul>	od (Populus deltoids)	5 10	N Y	FAC FACU	are OBL, FACW, or FAC (A):		
· · ·	af Maple (Acer negundo)	10	Y	FAC	Total Number of Dominant Species 5 Across All Strata (B):		
5		10		17.0	Percent of Dominant Species That		
-	20% Total Cover 9	45	= Total Cov	ver	are OBL, FACW, or FAC (A/B):		
Sapling/Shrub Stratur	$\underline{m} < 3^{\circ}$ DBH or > 1 m tall (Plot	size: 15' radi	us)		Prevalence Index Worksheet:		
1					Total % Cover of: Multiply by:		
2					OBL species X 1		
3					FACW species X 2		
4					FAC species X 3		
5					FACU species X 4		
	20% Total Cover		= Total Cov	ver	UPL species X 5		
Horb Stratum pop wa	adv ar woodv < 1 m toll (Diat	oizo: E' rodiu	a)		Totals (A) (B)		
		size: 5' radiu	5)	-	Prevalence Index = B/A =		
•	ss (Phalaris arundinacea)	80	Y	FACW	Hydrophytic Vegetation Indicators:		
2 Cattail species (7		25	Y	OBL	1-Rapid Test for Hydrophytic Veg		
3 Stinging Nettle (U		10	N	FACW	X 2-Dominance Test is > 50%		
	ettle (Laportea canadensis)	10	N	FAC	3-Prevalence Index is ≤3.0 <sup>1</sup>		
5 6					4-Morphological Adaptations (Provide supporting data in		
7					Remarks)		
8					Problematic Hydrophytic		
9					Vegetation <sup>1</sup> (Explain)		
10					<sup>1</sup> Indicators of hydric soil and wetland		
11					hydrology must be present, unless		
50% Total Cover	63 20% Total Cover 25	125	= Total Cov	ver	disturbed or problematic.		
Woody Vine Stratum	> 1 m tall (Plot size: 30	)' radius)					
1					Hydrophytic		
2					Vegetation Yes X No		
3	200/ Tatal Carrier				Present?		
	20% Total Cover		= Total Cov	ver			
Remarks: Vegetat	on passes the FAC-Neutral test.						

SOIL								Sampling Point: DP-7
		cribe to	the depth neede				cator to con	firm the absence of indicators.)
Depth	Matrix				ox Featur			Remarks
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	
0-1	10YR2/1	100					Silty Clay Loam	Root mass
1-24	10YR3/1	80	10YR4/6	20	С	M/PL	Silty Clay	
1-24	101K3/1	80	10114/0	20	C		Loam	
		epletion,	RM=Reduced Matrix	k, CS=0	Covered o	or Coated S		2 Location: PL=Pore Lining, M=Matrix
	oil Indicators:		_					Indicator for Problematic Hydric Soils <sup>3</sup> :
	listosol (A1)				yed Matri	ix (S4)	_	Coast Prairie Redox (A16)
	Histic Epipedon (A2	.)			ox (S5)	<b>、</b>	_	Iron-Manganese Masses (F12)
	Black Histic (A3)				atrix (S6)		_	Other (Explain in Remarks)
	Hydrogen Sulfide (A				cky Mine			
	Stratified Layers (As cm Muck (A10)	5)			yed Matr			
	Depleted Below Dai	k Surfa			latrix (F3			
	hick Dark Surface				ark Surface			<sup>3</sup> Indicators of hydrophytic vegetation and
	Sandy Mucky Miner				ressions			wetland hydrology must be present, unless
	5 cm Mucky Peat or			on Dop	100010110	, (10)		disturbed or problematic.
	ve Layer (if obse	•						·
Туре:								
Depth (in	ches):			_	1	Hydric So	oil Present?	Yes X No
Remarks								
HYDRO	LOGY							
	Hydrology Indic							
		n of one	is required; check a				Se	condary Indicators (minimum of 2 required)
	Surface Water (A1)				ned Leav		<u> </u>	Surface Soil Cracks (B6)
	ligh Water Table (A	42)			una (B13		<u>X</u>	
	Saturation (A3)				ic Plants			Dry-Season Water Table (C2)
	Vater Marks (B1)				Sulfide O			Crayfish Burrows (C8)
	Sediment Deposits	(B2)			-	on Living Ro	· · · · · · · · · · · · · · · · · · ·	Saturation Visible on Aerial Imagery (C9)
	Drift Deposits (B3)					ed Iron (C	· · · · · · · · · · · · · · · · · · ·	Stunted or Stressed Plants (D1)
	Algal Mat or Crust (	B4)				n on Tilled S	· · ·	Geomorphic Position (D2)
	ron Deposits (B5) nundation Visible on A	Vorial Ima			Surface ( Vell Data	· /	X	FAC-Neutral Test (D5)
	Sparse Vegetated Cor		0 , , ,		lain in Re			
	servations:			. (=,,p				
	Vater Present?	Yes	No X D	epth:		in		
	ble Present?	Yes		epth:		in		
	n Present?	Yes		epth:		-	tland Hydrolo	ogy Present Yes X No
	capillary fringe)			-pun _				<u> </u>
		ream ga	uge, monitoring wel	l, aeria	l photogr	raphs, pre	vious inspectio	ons), if available:
Remarks	Two or more se	econdar	y wetland indicators	were	observed	l; therefore	e wetland hydr	ology is present.
L								Prepared by: KRG

Project/Site:	Replacement Terminal EA	C	City/County:	Des Moine	es/ Polk Sampling Date: 5/8/18
Applicant/Owner:	Des Moines International Airpo	ort		State:	Iowa Sampling Point: DP-8
Investigator(s):	Katie Goff	S	ection, Town	ship Range	: S 29-32, T78N, R24W
Landform (hillslope,	terrace, etc.): Hillslope	L	ocal Relief (o	concave, cor	nvex, none): Convex
Slope (%): 9-14	Lat: 41.52283	L	ong: -93.6	6727	Datum: Upland
Soil Map Unit Name	: 822D2 - Lamoni silty clay lo	am, modera	tely eroded	NW	/I Classification: None
-	conditions on the site typical for thi				ormal (see Section 2.6)
Are vegetation	soil or hydrology	-	y disturbed?		Il Circumstances" present? Y X N
Are vegetation	soil or hydrology		y problematic		ed, explain any answers in Remarks)
					transects, important features, etc.
Hydrophytic Vegetat		No		iooutiono,	
Hydric Soil Present?		No X	ls the \$	Sampled Ar	<sup>ea</sup> Yes No X
Wetland Hydrology F		No X	within	a Wetland?	
Remarks:			_		
Remarks.					
VEGETATION - U	Ise scientific names of plants	<b>.</b>			
Tree Stratum >3" DBI	H (Plot size: 30' radius)	Absolute	Dominant	Indicator	Dominance Test Worksheet:
1 Sandbar Willow (S	,	% Cover	Species?	Status	Number of Deminent Creasing that
2 Silky Dogwood (C		10 20	Y Y	FACW FACW	Number of Dominant Species that are OBL, FACW, or FAC (A):
3		20	1	TAON	Total Number of Dominant Species
4					Across All Strata (B):
5					Percent of Dominant Species That
	20% Total Cover		= Total Cov	er	are OBL, FACW, or FAC (A/B):
Sapling/Shrub Stratur	$\underline{m}$ <3" DBH or > 1 m tall (Plot	size: 15' rad	ius)		Prevalence Index Worksheet:
1					Total % Cover of: Multiply by:
2					OBL species X 1
3					FACW species X 2
4					FAC species X 3
5					FACU species X 4
	20% Total Cover	-	= Total Cov	er	UPL species X 5
Herb Stratum non-wo	ody or woody < 1 m tall (Plot	size: 5' radiu	(e)		Totals (A) (B)
	, , , , , , , , , , , , , , , , , , ,		,		Prevalence Index = B/A =
,	ss (Phalaris arundinacea)	100	Y	FACW	Hydrophytic Vegetation Indicators:
2 Stinging Nettle (U	,	20	N	FACW	1-Rapid Test for Hydrophytic Veg
3 Horseweed ( <i>Cony</i> 4	<i>(za canadensis)</i>	20	N	NL	X 2-Dominance Test is $> 50\%$ 3-Prevalence Index is $\leq 3.0^1$
5					4-Morphological Adaptations
6					(Provide supporting data in
7					Remarks)
8					Problematic Hydrophytic
9					Vegetation <sup>1</sup> (Explain)
10					<sup>1</sup> Indicators of hydric soil and wetland
11	70 000/ 7 1 1 0 00				hydrology must be present, unless disturbed or problematic.
50% Total Cover	70 20% Total Cover 28	140	= Total Cov	er	disturbed of problematic.
Woody Vine Stratum	> 1 m tall (Plot size: 30	D' radius)			
1					Hydrophytic
2					Vegetation Yes <u>X</u> No
3	20% Total Covar				Present?
	20% Total Cover		= Total Cov	er	
Remarks: Vegetati	on passes the FAC-Neutral test.				

SOIL									Sampling Point	t: DP-8
Profile D	escription: (Des	cribe to	the depth need	ed to do	cument	the indi	cator to con	firm the absen	ce of indicator	's.)
Depth	Matrix			Redox	x Feature	-			Remarks	
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture			
0-5	10YR4/2	100					Silty Clay Loam			
5.00	10//00//1	100					Silty Clay			
5-22	10YR3/1	100					Loam			
<sup>1</sup> Type: C=	Concentration, D=D	epletion	RM=Reduced Mat	ix CS=Co	overed or	Coated S	and Grains	2 Location: PL =	=Pore Lining, M=I	Matrix
	oil Indicators:	opicitori,		1,00 00		ooulea e		Indicator for P		
	listosol (A1)		Sa	ndy Gleye	ed Matrix	(S4)			e Redox (A16)	
	listic Epipedon (A2	)		ndy Redo		<b>、</b> ,	-		nese Masses ( F	<sup>:</sup> 12)
E	Black Histic (A3)		Str	ipped Ma	trix (S6)		_	Other (Expla	ain in Remarks)	,
	lydrogen Sulfide (A				ky Minera					
	Stratified Layers (AS	5)			ed Matrix	(F2)				
	cm Muck (A10)			pleted Ma						
	Depleted Below Dar				Surface					
	hick Dark Surface	· /			ark Surfac			<sup>3</sup> Indicators of h		
	Sandy Mucky Miner			dox Depr	essions (	F8)		wetland hydrolo		ent, unless
	cm Mucky Peat or	•	53)					disturbed or pro	blematic.	
	ve Layer (if obse	rved):								
Туре:					. I					
Depth (inc	ches):				H	ydric So	oil Present?	Yes	No	X
Remarks:										
HYDRO										
	Hydrology Indic								, <b>.</b>	<b>.</b>
	ndicators (minimum	n of one					Se	condary Indicato		2 required)
	Surface Water (A1)				ed Leave			Surface Soil C		
	ligh Water Table (A	42)		uatic Fau				Drainage Patte		
	Saturation (A3)				c Plants (l				/ater Table (C2)	
	Vater Marks (B1)	(00)			ulfide Odo			Crayfish Burro		$a = m \cdot (CO)$
	Sediment Deposits	(В2)			spheres or Reduced	•			ible on Aerial Im essed Plants (D	0, 2, ( )
	Drift Deposits (B3) Algal Mat or Crust (I				Reduction o		·	-	•	1)
	ron Deposits (B5)	D4)			Surface (C		X	Geomorphic P FAC-Neutral T		
	nundation Visible on A	orial Ima			ell Data (	,			est (D5)	
	parse Vegetated Cor			-	ain in Ren	• •				
	· · · ·									
	servations:	Vaa	No. V	Jonth		in				
	Vater Present?	Yes Yes		Depth:		in in				
	ble Present? Present?	-		Depth: Depth:			tland Ludre	any Bracast	Voc	
	capillary fringe)	Yes	<u>No X</u>		,	in We	tland Hydrolo	yy rieseni	Yes	No <u>X</u>
	Recorded Data (sti	ream da	uae, monitorina w	ell, aerial	photogra	phs. prev	vious inspectio	ons), if available.		
2000100		san gu		,		, p.0				
Remarks:										
itemains.										
									Prepared	by: KRG
									Checked	by: ESM

Project/Site:	Replacement Terminal EA	(	City/County:	Des Moine	es/ Polk Sampling Date: 5/8/18
Applicant/Owner:	Des Moines International Airpo	ort		State:	Iowa Sampling Point: DP-9
Investigator(s):	Katie Goff	:	Section, Towr	ship Range	: S 29-32, T78N, R24W
Landform (hillslope,	terrace, etc.): Man-made Ba	sin I	Local Relief (	concave, cor	nvex, none): Concave
Slope (%): 9-14	Lat: 41.5233467		-	67907	Datum: Wetland 5
	: 370D2 - Sharpsburg silty cla		·	NW	/I Classification: None
	conditions on the site typical for thi	-			normal (see Section 2.6)
Are vegetation	soil or hydrology	-			Il Circumstances" present? Y X N
Are vegetation	soil or hydrology		ly problematic		ed, explain any answers in Remarks)
SUMMARY OF F	NDINGS – Attach site map s	howing sa	mpling point	locations,	transects, important features, etc.
Hydrophytic Vegeta		No		0	
Hydric Soil Present		No		Sampled Ar a Wetland?	
Wetland Hydrology	Present? Yes X	No		a wettanta:	
Remarks: Wetland	d 5 appears to be a man-made :	stormwater	detention bas	sin that was	constructed in the 1990s.
VEGETATION -	Jse scientific names of plants	<b>.</b>			
Tree Stratum >3" DB	H (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1 Sandbar Willow (	Salix interior)	5	Y	FACW	Number of Dominant Species that
2					are OBL, FACW, or FAC (A):
3					Total Number of Dominant Species 2
4					Across All Strata (B):
5					Percent of Dominant Species That
	20% Total Cover 1	5	= Total Cov	ver	are OBL, FACW, or FAC (A/B):
Sapling/Shrub Stratu	m <3" DBH or > 1 m tall (Plot	size: 15' rad	dius)		Prevalence Index Worksheet:
1					Total % Cover of: Multiply by:
2					OBL species X 1
3					FACW species X 2
4					FAC species X3
5	20% Total Cover		Tatal Oa		FACU species X 4 UPL species X 5
			= Total Cov	/er	Totals (A) (B)
Herb Stratum non-wo	oody or woody < 1 m tall (Plot	size: 5' radi	us)		· · · · · · · · · · · · · · · · · · ·
1 Reed Canary Gra	ss (Phalaris arundinacea)	110	Y	FACW	Prevalence Index = B/A = Hydrophytic Vegetation Indicators:
2		110	1	TAON	1-Rapid Test for Hydrophytic Veg
3					X 2-Dominance Test is > 50%
4					3-Prevalence Index is ≤3.0 <sup>1</sup>
5					4-Morphological Adaptations
6					(Provide supporting data in
7					Remarks)
8 9					Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
10					<sup>1</sup> Indicators of hydric soil and wetland
11					hydrology must be present, unless
50% Total Cover	55 20% Total Cover 22	110	= Total Cov	ver	disturbed or problematic.
Woody Vine Stratum	> 1 m tall (Plot size: 3	0' radius)			
1					Hydrophytic
2					Vegetation Yes X No
3					Present?
	20% Total Cover	-	= Total Cov	ver	
Remarks: Vegetat	ion passes the FAC-Neutral test.				

SOIL	Accessing (Dec.					4 4 h a 1 m al		Sampling Point: DP-9
		cribe to	the depth neede				icator to con	firm the absence of indicators.)
Depth	Matrix				ox Featur			Remarks
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	
0-20	10YR3/1 10YR4/2	40 40	10YR4/6	10 10	С	М	Silty Clay Loam	Redox Concentrations (Manganese)
	101R4/2	40	10YR5/8	10			Silty Clay	
20-24	10YR5/2	80	10YR4/6	20	С	М	Loam	
							Loam	
17.000.00	Concentration D-D	anlation				T Cootod (		2 Leasting DI - Dara Lining M-Matrix
	Concentration, D=D	epletion,	RIVI=Reduced Matr	IX, CS=C	overed o	r Coated s		2 Location: PL=Pore Lining, M=Matrix
	oil Indicators:		Con		ad Matri	v (CA)		Indicator for Problematic Hydric Soils <sup>3</sup> :
	listosol (A1)	、			ed Matri	x (54)	—	Coast Prairie Redox (A16)
	Histic Epipedon (A2	)			ox (S5) atrix (S6)		—	X Iron-Manganese Masses (F12) Other (Explain in Remarks)
	Black Histic (A3) Tydrogen Sulfide (A	4)			cky Miner		_	
	Stratified Layers (AS				yed Matri			
	cm Muck (A10)	)			latrix (F3			
	Depleted Below Dar	k Surfa			k Surface			
	hick Dark Surface				ark Surfa			<sup>3</sup> Indicators of hydrophytic vegetation and
	Sandy Mucky Miner				ressions			wetland hydrology must be present, unless
	5 cm Mucky Peat or			лох рер	103310113	(10)		disturbed or problematic.
		•	,0)					
	ve Layer (if obse	rvea):						
Type:						l la colución C		
Depth (in	cnes):				1	Hyaric S	oil Present?	Yes <u>X</u> No
Remarks:								
HYDRO	LOGY							
Matlend								
	Hydrology Indicators (minimum		in required, check	all that a	n n n h d		C a	conden (Indicators (minimum of 0 required)
	Surface Water (A1)	i oi one			ned Leav		<u>.5e</u>	condary Indicators (minimum of 2 required) Surface Soil Cracks (B6)
	High Water Table (A	121			una (B13			Drainage Patterns (B10)
	Saturation (A3)	12)			ic Plants			Dry-Season Water Table (C2)
	Vater Marks (B1)				Sulfide O			Crayfish Burrows (C8)
	Sediment Deposits	(B2)				on Living Ro	oots (C3)	Saturation Visible on Aerial Imagery (C9)
	Drift Deposits (B3)	(02)				ed Iron (C		Stunted or Stressed Plants (D1)
	Algal Mat or Crust (I	R4)				on Tilled S		Geomorphic Position (D2)
	ron Deposits (B5)	54)			Surface (		X	FAC-Neutral Test (D5)
	nundation Visible on A	Aerial Ima			Vell Data	• •	<u></u>	
	Sparse Vegetated Cor				lain in Re			
	· · · · · · · · · · · · · · · · · · ·		, <u> </u>					
Field Ob	servations:	Yes		Jonth.		in		
Surface V		1 1 2 2		Depth:		in in		
Surface V		-						
Water Ta	ble Present?	Yes		Depth:			tland Under	ay Brocont Voc V No
Water Ta Saturation	ble Present? n Present?	-		Depth: Depth:		-	etland Hydrolo	ogy Present Yes <u>X</u> No
Water Tal Saturation (includes	ble Present? n Present? capillary fringe)	Yes Yes	No X [	Depth:	Inhotogr	in We	,	
Water Tal Saturation (includes	ble Present? n Present?	Yes Yes	No X [	Depth:	l photogr	in We	,	
Water Tal Saturation (includes	ble Present? n Present? capillary fringe)	Yes Yes	No X [	Depth:	l photogr	in We	,	
Water Ta Saturation (includes Describe	ble Present? n Present? capillary fringe) Recorded Data (str	Yes Yes ream ga	No X [	Depth:		in We	vious inspectio	ons), if available:
Water Tal Saturation (includes	ble Present? n Present? capillary fringe) Recorded Data (str	Yes Yes ream ga	No X [	Depth:		in We	vious inspectio	ons), if available:
Water Ta Saturation (includes Describe	ble Present? n Present? capillary fringe) Recorded Data (str	Yes Yes ream ga	No X [	Depth:		in We	vious inspectio	ons), if available:
Water Ta Saturation (includes Describe	ble Present? n Present? capillary fringe) Recorded Data (str	Yes Yes ream ga	No X [	Depth:		in We	vious inspectio	ons), if available:

Project/Site:	Replacement Terminal EA	C	ity/County:	Des Moine	es/ Polk	Sampling Date:	5/8/18	8
Applicant/Owner:	Des Moines International Airpo	ort		State:	lowa	Sampling Point:	DP-1	0
Investigator(s):	Katie Goff	S	ection, Towr	ship Range	S 29-32,	T78N, R24W		
Landform (hillslope,	terrace, etc.): Hillslope	L	ocal Relief (c	concave, cor	vex, none):	Convex		
Slope (%): 9-14	Lat: 41.523549	L	ong: -93.6	65345	Datum:	Upland		
· · · · ·	: 370D2 - Sharpsburg silty cla		•	NW	I Classificati	-		
-	conditions on the site typical for thi	-			ormal (see S	-		
Are vegetation	soil or hydrology	-	/ disturbed?		I Circumstance		ΥX	N
Are vegetation	soil or hydrology		/ problematic			y answers in Rer		···
			-			•	,	
	NDINGS – Attach site map s		npling point	locations,	transects, ir	nportant featur	es, etc.	
Hydrophytic Vegetat		No	le the 9	Sampled Ar	02 10			X
Hydric Soil Present?		No X No X		a Wetland?			No	X
Wetland Hydrology I	Present? Yes	No X	-					
Remarks:								
VEGETATION - U	Jse scientific names of plants	5.						
Tree Stratum >3" DBI	H (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance	Test Workshee	et:	
1		// 00/01		Oluluo	Number of [	Dominant Specie	s that	
2						ACW, or FAC (A)		1
3					Total Numbe	er of Dominant S	pecies	1
4					Across All S	. ,		1
5						Dominant Species		100
	20% Total Cover		= Total Cov	ver	are OBL, FA	ACW, or FAC (A/	3):	
Sapling/Shrub Stratur	m <3" DBH or > 1 m tall (Plot	size: 15' radi	us)		Prevalence	Index Workshe	et:	
1					Total % (		<b>Multiply</b>	by:
2					OBL species	x X	1	
3					FACW speci		2	
4					FAC species		3	
5	20% Total Cover		<b>T</b> ( ) O		FACU species		4 5	
		_	= Total Cov	ver			-	
Herb Stratum non-wo	ody or woody < 1 m tall (Plot	size: 5' radiu	s)		```	A) ( nce Index = B/A	B)	
1 Reed Capary Gra	ss (Phalaris arundinacea)	100	Y	FACW		c Vegetation Inc		
2	ss (Filalaris al unumacea)	100	1	TACW		apid Test for Hyd		
3						minance Test is		vcg
4						evalence Index is		
5					4-Mc	orphological Ada	otations	
6						vide supporting c	lata in	
7						arks)		
8						lematic Hydroph		
9 10					-	etation <sup>1</sup> (Explain		
11	<u> </u>					of hydric soil and lust be present, t		1
50% Total Cover	50 20% Total Cover 20	100	= Total Cov	ver		problematic.	111000	
Woody Vine Stratum	> 1 m tall (Plot size: 30	0' radius)	1					
1					Hydrophyt			
2					Vegetation Present?		No	
3	20% Total Cover		- T-1-1-0		FICSCIIL!			
Demonstration March (* 1		-	= Total Cov	er				
Remarks: Vegetati	ion passes the FAC-Neutral test.							

SOIL								Sa	mpling Point: DP-10
Profile D	escription: (Desc	cribe to	the depth neede	d to do	ocumen	nt the indi	cator to con	firm the absence	
Depth	Matrix			Redo	ox Featu	ires		ſ	Remarks
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		(change)
0-20	10YR4/2	40					Silty Clay		
	10YR3/1	60					Loam		
1Tuno: C=	Concentration D=D	oplotion	RM=Reduced Matri	× CS-C	'overed a	or Costod S	and Crains	2 Location: DL =Do	collining M-Matrix
Hydric S	oil Indicators:	epielion,	RIVI-Reduced Main	x, US-U		JI COALEU S	anu Grains.	2 Location: PL=Poi Indicator for Prot	blematic Hydric Soils <sup>3</sup> :
	listosol (A1)		San	dy Gley	ed Matr	ix (S4)		Coast Prairie R	
	listic Epipedon (A2)	)	San	dy Red	ox (S5)			Iron-Manganes	e Masses (F12)
	Black Histic (A3)				atrix (S6			Other (Explain i	n Remarks)
	lydrogen Sulfide (A				ky Mine				
	Stratified Layers (A5	5)			yed Mati				
	cm Muck (A10) Depleted Below Dar	k Surfa			atrix (F3 surface				
	hick Dark Surface					ace (F7)		<sup>3</sup> Indicators of hydro	ophytic vegetation and
	Sandy Mucky Miner				ressions				nust be present, unless
	cm Mucky Peat or					( )		disturbed or probler	
Restricti	ve Layer (if obse	rved):							
Type:									
Depth (ind	ches):			_		Hydric Sc	oil Present?	Yes	<u>No X</u>
Remarks:	Disturbed Soil,	Dry							
HYDRO									
	Hydrology Indica								
		of one	is required; check a				<u>Se</u>		minimum of 2 required)
	Surface Water (A1) ligh Water Table (A	2)			ied Leav Jna (B13	ves (B9)		<ul> <li>Surface Soil Crack</li> <li>Drainage Patterns</li> </ul>	
	Saturation (A3)	~~)			ic Plants			Dry-Season Wate	
	Vater Marks (B1)					)dor (C1)		Crayfish Burrows	. ,
	Sediment Deposits (	(B2)	*	0		on Living Ro	ots (C3)		on Aerial Imagery (C9)
	Drift Deposits (B3)	,				ed Iron (C4	· · · · · · · · · · · · · · · · · · ·	Stunted or Stresse	0,00,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,0000
	Igal Mat or Crust (B	34)	Rec	ent Iron I	Reductior	n on Tilled S	oil (C6)	Geomorphic Posit	
	on Deposits (B5)				Surface		X	FAC-Neutral Test	(D5)
	nundation Visible on A			-	Vell Data	. ,			
	parse Vegetated Con	icave Sul		er (Expi	ain in Re	emarks)			
	servations:	Maria							
	Vater Present? ble Present?	Yes		epth: _		_ in			
	Present?	Yes Yes		epth:		_ in   in   We	tland Hydrol	ogy Present Yes	s No X
	capillary fringe)	103		epui		- "   "		ogy riesent rea	
		eam ga	uge, monitoring we	l, aerial	photog	raphs, prev	vious inspection	ons), if available:	
	,	-	-		0	- •	·		
Remarks:									
									Prepared by: <u>KRG</u> Checked by: ESM

Project/Site:	Replacement Terminal EA	C	ity/County:	Des Moine	es/ Polk Sa	ampling Date:	5/8/18	
Applicant/Owner:	Des Moines International Airpo	ort		State:	lowa Sa	ampling Point:	DP-11	
Investigator(s):	Katie Goff	S	ection, Towr	ship Range	: S 29-32, T7	78N, R24W		_
Landform (hillslope,	terrace, etc.): Drainageway	L	ocal Relief (o	concave, cor	vex, none):	Concave		
Slope (%): 0-5	Lat: 41.5238769		ong: -93.6		Datum:	Wetland 6		
	: 11B - Colo-Judson silty clay		·	ded NW	/I Classification	: None		—
-	conditions on the site typical for this		-		ormal (see Sec			—
Are vegetation	soil or hydrology	-	y disturbed?		Il Circumstances	,	Υ Χ Ν	—
Are vegetation	soil or hydrology		y problematic		ed, explain any a	•		—
·							,	
	NDINGS – Attach site map s		npling point	locations,	transects, imp	oortant feature	etc.	
Hydrophytic Vegetat		No	- Is the	Sampled Ar		V	NI -	
Hydric Soil Present?		No		a Wetland?		X	No	
Wetland Hydrology I	Present? Yes X	No	_					
Remarks:								
VEGETATION - U	Ise scientific names of plants							
Tree Stratum >3" DBI	H (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance T	est Worksheet	:	
1 Sandbar Willow (S	Salix interior)	20	Y	FACW	Number of Do	minant Species	that	
2						W, or FAC (A):	2	
3					Total Number	of Dominant Sp	becies 2	
4					Across All Stra	. ,		
5						minant Species		)
	20% Total Cover 4	20	= Total Cov	/er	are OBL, FAC	W, or FAC (A/B	s):	
Sapling/Shrub Stratur	$\underline{m}$ <3" DBH or > 1 m tall (Plot s	size: 15' rad	ius)		Prevalence In	idex Workshee	¥t:	
1					Total % Co	ver of:	Multiply by:	
2					OBL species	X		
3					FACW species	X	2	
4			-		FAC species	X:		
5					FACU species	X.		
	20% Total Cover		= Total Cov	ver	UPL species	X :		
Herb Stratum non-wo	ody or woody < 1 m tall (Plot :	size: 5' radiu	is)		Totals (A)		-	
	, , , , , , , , , , , , , , , , , , ,		,	54014/		e Index = B/A		
	ss (Phalaris arundinacea)	100	Y	FACW		Vegetation Ind		
2 Stinging Nettle (U 3		10	N	FACW		d Test for Hydro inance Test is >		
4						alence Index is		
5						phological Adap		
6						le supporting da		
7					Remar	,		
8						matic Hydrophy	rtic	
9					-	ation <sup>1</sup> (Explain)		
10						hydric soil and		
11 50% Total Cover	55 20% Total Cover 22				disturbed or pr	st be present, ui	niess	
		110	= Total Cov	ver		oblematic.		
Woody Vine Stratum	> 1 m tall (Plot size: 30	radius)	1					
1					Hydrophytic	Vac V	No	
2 3					Vegetation Present?	Yes X	No	—
<u> </u>	20% Total Cover		= Total Cov	/or				
Remarks: Vegetati	on passes the FAC-Neutral test.	1						

SOIL								Sampling Point: DP-11		
Profile D	escription: (Desc	cribe to	the depth neede				cator to con	firm the absence of indicators.)		
Depth	Matrix				ox Featu			Remarks		
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture			
0-18	10YR3/1	70	10YR4/6	30	С	М	Silty Clay Loam			
18-24	10YR3/1 10YR4/2	40 30	10YR4/6	30	С	М	Silty Clay Loam			
		epletion,	RM=Reduced Matrix	<, CS=0	Covered of	or Coated S	Sand Grains.	2 Location: PL=Pore Lining, M=Matrix		
Hydric Soil Indicators:       Indicators:       Indicator for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Gleyed Matrix (S4)       Coast Prairie Redox (A16)         Histic Epipedon (A2)       Sandy Redox (S5)       Iron-Manganese Masses (F12)         Black Histic (A3)       Stripped Matrix (S6)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)       Other (Explain in Remarks)         Stratified Layers (A5)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       X       Redox Dark Surface (F6)         Thick Dark Surface (A12)       Depleted Dark Surface (F7) <sup>3</sup> Indicators of hydrophytic vegetation and										
	Sandy Mucky Minera 5 cm Mucky Peat or			ox Dep	ressions	s (F8)		wetland hydrology must be present, unless disturbed or problematic.		
Restrict	Restrictive Layer (if observed):									
Depth (in Remarks				_		Hydric So	oil Present?	Yes <u>X</u> No		
Remarks										
HYDRO	LOGY									
Primary III 	Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       X       Geomorphic Position (D2)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       X       FAC-Neutral Test (D5)         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)       X       FAC-Neutral Test (D5)									
Surface V Water Ta Saturation (includes		_	No X D			raphs, prev		ons), if available:		
								Prepared by: KRG		

Prepared by:	KRG
Checked by:	ESM

Project/Site:	Replacement Terminal EA	С	ity/County:	Des Moine	es/ Polk Sampli	ng Date: 5/8/18	3
Applicant/Owner:	Des Moines International Airpo	ort		State:	Iowa Sampli	ng Point: DP-12	2
Investigator(s):	Katie Goff	S	ection, Towr	ship Range	: S 29-32, T78N,	R24W	
Landform (hillslope,	terrace, etc.): Drainageway	L	ocal Relief (o	concave, cor	nvex, none): Con	cave	
Slope (%): 0-5	Lat: 41.5245355	L	ong: -93.6	67413	Datum: Wet	tland 6	
Soil Map Unit Name	: 11B - Colo-Judson silty clay	loams, occa	asionally floo	ded NW	/I Classification:	None	
-	conditions on the site typical for this				ormal (see Section	2.6)	
Are vegetation	soil or hydrology	significantly	/ disturbed?		al Circumstances" pres		N
Are vegetation	soil or hydrology		v problematic	? (if neede	ed, explain any answ	ers in Remarks)	
	NDINGS – Attach site map sl		-		tranaasta imnarta	nt factures ato	
				liocations,	transects, importa		
Hydrophytic Vegetat Hydric Soil Present? Wetland Hydrology I	Yes X	No No No		Sampled Ar a Wetland?		<u>(</u> No	
		NU	-				
Remarks:							
VEGETATION - U	Jse scientific names of plants.						
Tree Stratum >3" DBI	H (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test V	Norksheet:	
	ood (Populus deltoids)	30	Y	FAC	Number of Domina		3
2 Sandbar Willow (	Salix interior)	10	Y	FACW	are OBL, FACW, o	. ,	
3 4					Total Number of Do Across All Strata (E		3
5					Percent of Dominal	· .	
-	20% Total Cover <u>8</u>	40	= Total Cov	ver	are OBL, FACW, o		100
Sapling/Shrub Stratur	$\underline{m}$ <3" DBH or > 1 m tall (Plot s	size: 15' radi	us)		Prevalence Index	Worksheet:	
1					Total % Cover c	of: Multiply	by:
2					OBL species	X 1	
3					FACW species	X 2	
<u>4</u> 5					FAC species	X3	
5	20% Total Cover		- Total Cau		FACU species UPL species	X 4 X 5	
			= Total Cov	er	Totals (A)	(B)	
Herb Stratum non-wo	ody or woody < 1 m tall (Plot s	size: 5' radiu	s)		Prevalence Inc		
1 Reed Canary Gra	ss (Phalaris arundinacea)	100	Y	FACW	Hydrophytic Vege		
2						st for Hydrophytic	
3					X 2-Dominand	ce Test is > 50%	-
4					3-Prevalence	ce Index is ≤3.0 <sup>1</sup>	
5						gical Adaptations	
6 7					(Provide su Remarks)	pporting data in	
8					,	c Hydrophytic	
9					Vegetation		
10					<sup>1</sup> Indicators of hydr		
11					hydrology must be	present, unless	
50% Total Cover	50 20% Total Cover 20	100	= Total Cov	ver	disturbed or proble	matic.	
Woody Vine Stratum	> 1 m tall (Plot size: 30	' radius)	[		Uvdronbu#in		
2					Hydrophytic Vegetation Yo	es X No	
3					Present?		
	20% Total Cover		= Total Cov	ver			
Remarks: Vegetati	ion passes the FAC-Neutral test.		I				

SOIL								Sampling Point: DP-12		
Profile Description: (Describe to the depth needed to document the indicator to confirm the absence of indicators.)										
Depth         Matrix         Redox Features         Remarks										
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Kentaks		
0-22	10YR3/1	80	10YR4/6	20	С	М	Silty Clay			
							loam			
	Concentration, D=De	onlotion	PM=Reduced Matri	v CS=C	`overed (	or Coated S	and Grains	2 Location: PL=Pore Lining, M=Matrix		
	oil Indicators:	epielion,	RIVI-Reduced Main	x, US-U	Jovereu		anu Grains.	Indicator for Problematic Hydric Soils <sup>3</sup> :		
	listosol (A1)		San	dv Glev	/ed Mati	rix (S4)		Coast Prairie Redox (A16)		
	listic Epipedon (A2)	)			ox (S5)			Iron-Manganese Masses (F12)		
	Black Histic (A3)	/			atrix (S6	6)		Other (Explain in Remarks)		
	lydrogen Sulfide (A	4)				éral (F1)				
	Stratified Layers (A5				yed Mat					
	cm Muck (A10)			leted M	latrix (F:	3)				
	Pepleted Below Dar									
	hick Dark Surface					face (F7)		<sup>3</sup> Indicators of hydrophytic vegetation and		
	andy Mucky Miner	• •		lox Dep	ressions	s (F8)		wetland hydrology must be present, unless		
5	cm Mucky Peat or	Peat (S	53)					disturbed or problematic.		
Restricti	ve Layer (if obse	rved):								
Type:										
Depth (ind	ches):			_		Hydric So	oil Present?	Yes X No		
Remarks:										
HYDRO	LOGY									
	Hydrology Indica									
	ndicators (minimum	of one					<u>S</u>	econdary Indicators (minimum of 2 required)		
	Surface Water (A1)					ves (B9)		Surface Soil Cracks (B6)		
	ligh Water Table (A	(2)			una (B1		_X	Drainage Patterns (B10)		
	Saturation (A3)				ic Plants			Dry-Season Water Table (C2)		
	Vater Marks (B1)					Odor (C1)		Crayfish Burrows (C8)		
	Sediment Deposits (	(B2)				s on Living Ro		Saturation Visible on Aerial Imagery (C9)		
	Prift Deposits (B3)					ced Iron (C4	/	Stunted or Stressed Plants (D1)		
	Igal Mat or Crust (E	34)				n on Tilled S		Geomorphic Position (D2)		
	ron Deposits (B5) nundation Visible on A	orial Ima			Surface Vell Data		<u>X</u>	FAC-Neutral Test (D5)		
	parse Vegetated Con		<u> </u>	0		a (D9) lemarks)				
	servations:		. ,	(		-,				
	Vater Present?	Yes	No X D	epth:		in				
	ble Present?	Yes		epth:		in				
	Present?	Yes		epth:		_	tland Hydro	logy Present Yes X No		
	capillary fringe)					-	, <b>,</b>			
	Recorded Data (str	eam ga	uge, monitoring we	ll, aerial	l photog	raphs, prev	ious inspect	ions), if available:		
		-	-		0					
Remarks:										
. ternorito.										
								Prepared by: KRG		
								Checked by: ESM		

Project/Site:	Replacement Terminal EA	С	ity/County:	Des Moine	es/ Polk Sampling Date: 5/8/18
Applicant/Owner:	Des Moines International Airpo	State:	Iowa Sampling Point: DP-13		
Investigator(s):	Katie Goff	ship Range	: S 29-32, T78N, R24W		
	terrace, etc.): Drainageway				nvex, none): concave
Slope (%): 0-5	Lat: 41.5247744		ong: -93.6		Datum: Upland
	: 11B - Colo-Judson silty clay		·		/I Classification: None
	conditions on the site typical for this				normal (see Section 2.6)
Are vegetation	soil or hydrology	-			al Circumstances" present? Y X N
Are vegetation	soil or hydrology		y problematic		ed, explain any answers in Remarks)
		howing san	npling point	t locations,	transects, important features, etc.
Hydrophytic Vegetat		No	- la tha	Sompled Ar	
Hydric Soil Present?		No		Sampled Ar a Wetland?	
Wetland Hydrology I	Present? Yes	No X	_		
Remarks:					
VEGETATION – U	Ise scientific names of plants				
Tree Stratum >3" DBI	H (Plot size: 30' radius)	Absolute	Dominant	Indicator	Dominance Test Worksheet:
		% Cover	Species?	Status	
1 2					Number of Dominant Species that are OBL, FACW, or FAC (A):
3					Total Number of Dominant Species
4					Across All Strata (B):
5					Percent of Dominant Species That
	20% Total Cover		= Total Cov	/er	are OBL, FACW, or FAC (A/B):
		· · · · · · · · · · · · · · · · · · ·			
Sapling/Shrub Stratur	$\underline{m} < 3^{\circ}$ DBH or > 1 m tall (Plot	size: 15' radi	us)		Prevalence Index Worksheet:
1					Total % Cover of: Multiply by:
2					OBL species X1
3					FACW species X 2 FAC species X 3
4 5					FACU species X 4
0	20% Total Cover		= Total Cov	/or	UPL species X 5
					Totals (A) (B)
Herb Stratum non-wo	ody or woody < 1 m tall (Plot	size: 5' radiu	s)		Prevalence Index = B/A =
1 Common Dandeli	on (Taraxacum officinale)	10	N	FACU	Hydrophytic Vegetation Indicators:
	(Capsella bursa-pastoris)	20	Y	FACU	1-Rapid Test for Hydrophytic Veg
3 Bull Thistle (Cirsic		10	N	FACU	2-Dominance Test is > 50%
4 Cup Plant (Silphiu	ım perfoliatum)	20	Y	FACW	3-Prevalence Index is ≤3.0 <sup>1</sup>
5 Grass species (ur	iknown)	40	Y	assumed FAC	4-Morphological Adaptations
6				170	(Provide supporting data in
7					Remarks)
8					Problematic Hydrophytic
9					Vegetation <sup>1</sup> (Explain)
10					<sup>1</sup> Indicators of hydric soil and wetland
11 50% Total Cover	50 20% Total Cover 20	100	Tabal Oa		hydrology must be present, unless disturbed or problematic.
		100	= Total Cov	/er	
Woody Vine Stratum	> 1 m tall (Plot size: 30	' radius)	1		
1					Hydrophytic
2 3					Vegetation Yes <u>No X</u> Present?
0	20% Total Cover		= Total Cov	/or	
Remarks: Vegetati	on fails the FAC-Neutral test.				<u> </u>
i sinans. vegetati					

SOIL								Sampling Point: DP-13		
Profile Description: (Describe to the depth needed to document the indicator to confirm the absence of indicators.)										
Depth Matrix Redox Features Remarks										
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Reliaiks		
0-22	10YR3/1	90	10YR4/6	10	С	М	Silty Clay			
					-		Loam			
	Concentration, D=D	epletion,	RM=Reduced Matri	x, CS=0	Covered of	or Coated S	and Grains.	2 Location: PL=Pore Lining, M=Matrix		
	oil Indicators:		0		Matu	··· (04)		Indicator for Problematic Hydric Soils <sup>3</sup> : Coast Prairie Redox (A16)		
	listosol (A1) listic Epipedon (A2	)			/ed Matr ox (S5)	IX (34)	-	Iron-Manganese Masses ( F12)		
	Black Histic (A3)	)			atrix (S6	5)	-	Other (Explain in Remarks)		
	lydrogen Sulfide (A	4)			cky Mine		-			
	Stratified Layers (As	5)			yed Mati					
	cm Muck (A10)				latrix (F3					
	Depleted Below Dar									
	hick Dark Surface Sandy Mucky Miner				ressions	ace (F7)		<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless		
	cm Mucky Peat or	• •		iox Dep	163510113	5 (1 0)		disturbed or problematic.		
	ve Layer (if obse	•	•)							
Type:	ve Layer (il obse	iveu).								
Depth (in	ches):					Hydric So	oil Present?	Yes X No		
Remarks						-				
HYDRO	LOGY									
Wetland	Hydrology Indica	ators:								
	ndicators (minimum						Se	econdary Indicators (minimum of 2 required)		
	Surface Water (A1)					ves (B9)		_ Surface Soil Cracks (B6)		
	ligh Water Table (A	42)			una (B13			Drainage Patterns (B10)		
	Saturation (A3)				ic Plants			Dry-Season Water Table (C2)		
	Vater Marks (B1)	(00)		-		dor (C1)		Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)		
	Sediment Deposits ( Drift Deposits (B3)	(DZ)				on Living Ro ed Iron (C4	· · · · · · · · · · · · · · · · · · ·	Stunted or Stressed Plants (D1)		
	Algal Mat or Crust (I	B4)				n on Tilled S	/	Geomorphic Position (D2)		
	ron Deposits (B5)	51)			Surface			FAC-Neutral Test (D5)		
	nundation Visible on A	Aerial Ima			Vell Data			_ ( )		
	parse Vegetated Con	ncave Sur	face(B8) Oth	er (Exp	lain in R	emarks)				
Field Ob	servations:									
	Vater Present?	Yes		epth:		in				
	ble Present?	Yes _		epth:		_ in	(I.a			
	n Present?	Yes		epth:		_ in   We	tiand Hydroi	logy Present Yes <u>No X</u>		
	capillary fringe) Recorded Data (str	ream da	uae. monitorina we	II. aeria	photog	raphs, prev	ious inspecti	ons), if available:		
2000100	Data (of	Jun gu	- <u></u> ,	,						
<u> </u>										
Remarks										
								Prepared by: KRG		
								Checked by: ESM		

Project/Site:	Replacement Terminal EA	C	ity/County:	Des Moine	es/ Polk Sampling Date	: 5/8/18
Applicant/Owner:	Des Moines International Airpo	ort		State:	Iowa Sampling Poin	t: DP-14
Investigator(s):	Katie Goff	S	ection, Towr	ship Range	: S 29-32, T78N, R24W	
Landform (hillslope,	terrace, etc.): Drainageway	La	ocal Relief (d	concave, cor	nvex, none): None	
Slope (%): 0-5	Lat: 41.5230713	L	ong: -93.6	66922	Datum: Upland	
Soil Map Unit Name	: 11B - Colo-Judson silty clay	loams, occa	sionally floo	ded NW	/I Classification: None	
Are climatic/hydrologic	conditions on the site typical for this	s time of year	? No, v	wetter than n	ormal (see Section 2.6)	
Are vegetation	soil or hydrology	significantly	disturbed?	Are "Norma	Il Circumstances" present?	Y X N
Are vegetation	soil or hydrology	significantly	problematic	? (if neede	ed, explain any answers in R	emarks)
SUMMARY OF FI	NDINGS – Attach site map sl	howing sam	npling point	locations,	transects, important feat	ures, etc.
Hydrophytic Vegetat Hydric Soil Present?	Yes X	No No		Sampled Ar a Wetland?		No X
Wetland Hydrology I	Present? Yes I	No <u>X</u>	-	a wedana i		
Remarks:						
VEGETATION - U	Jse scientific names of plants					
Tree Stratum >3" DBI	H (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksh	eet:
	ood (Populus deltoids)	5	Y	FAC	Number of Dominant Spec	
2 Sandbar Willow (	Salix interior)	5	Y	FACW	are OBL, FACW, or FAC (	A):
3 4					Total Number of Dominant Across All Strata (B):	Species 3
5					Percent of Dominant Spec	ies That
• 	20% Total Cover 2	10	= Total Cov	ver	are OBL, FACW, or FAC (	
Sapling/Shrub Stratur	$\underline{m}$ <3" DBH or > 1 m tall (Plot s	size: 15' radii	us)		Prevalence Index Works	neet:
1					Total % Cover of:	Multiply by:
2					OBL species	X 1
3					FACW species	X 2
<u>4</u> 5					FAC species FACU species	X 3 X 4
5	20% Total Cover		- Total Car		UPL species	X 5
			= Total Cov	er .	Totals (A)	(B)
Herb Stratum non-wo	ody or woody < 1 m tall (Plot s	size: 5' radius	s)		Prevalence Index = B	. ,
1 Reed Canary Gra	ss (Phalaris arundinacea)	100	Y	FACW	Hydrophytic Vegetation I	
2 Stinging Nettle (U		5	N	FACW	1-Rapid Test for Hy	
3	/				X 2-Dominance Test	is > 50%
4					3-Prevalence Index	< is ≤3.0 <sup>1</sup>
5					4-Morphological Ac	
6					(Provide supporting Remarks)	J data in
7 8					Problematic Hydro	obutio
9					Vegetation <sup>1</sup> (Expla	
10					<sup>1</sup> Indicators of hydric soil a	
11					hydrology must be present	
50% Total Cover	51 20% Total Cover 21	105	= Total Cov	ver	disturbed or problematic.	
Woody Vine Stratum	> 1 m tall (Plot size: 30	r' radius)	E		U selve e la 41-	
1 2		┟─────┦			Hydrophytic Vegetation Yes >	( No
3			ļ		Present?	
	20% Total Cover		= Total Cov	ver		
Remarks: Vegetati	ion passes the FAC-Neutral test.			-		

Oppin         Matrix         Redox Features         Remarks           (nnces)         Color (moist)         %         Type         Loc         M         Silly Clay           0-24         10YR3/1         80         SYR46         10         C         M         Silly Clay           0         1         1         0         C         M         Silly Clay	SOIL							-	Sampling Point: DP-14		
Concernsity       %       Color (Molest)       %       Type?       Loc?       Texture       Nemans         0-24       10YR3/1       80       6YR4/6       10       C       M       Sity Clay         0       10       0       M       Sity Clay       Loam       Image: Clay Clay       Image:	Profile Description: (Describe to the depth needed to document the indicator to confirm the absence of indicators.)										
(inches)       Color (moist)       %       Color (Moist)       %       Type       Loc'       Texture         0-24       10YR3/1       80       0YR4/6       10       C       M       Sili Clay         0-24       10YR3/1       80       0YR4/6       10       C       M       Sili Clay         0-24       10YR3/1       80       0YR4/6       10       C       M       Sili Clay         0-24       10YR3/1       80       0YR4/6       10       C       M       Sili Clay         0-24       10YR3/1       80       0YR4/6       10       Loarn       Loarn       Loarn         0-24       10YR3/1       80       0YR4/6       Loarn       Loarn       Loarn       Loarn         0-25       10       10       10       10       10       Loarn       Loarn       Loarn       Loarn       Indicators       Midiator (Si)       Colorthants (Mdi)       Loarn       Indicators of Nydrophytic vegatation and wetland hydric 0yg must be present; mess       Sindicators of Nydrophytic vegatation and wetland hydric0yg must be present; mess       Sindicators of Nydrophytic vegatation and wetland hydric0yg must be present; mess       Sindicators (Rin)       Midicators (Rin)       Midicators (Rin)       Midicators (Rin)       Midicator	-								Remarks		
U-24       IO FK31       au       SYR46       10       C       M       Loam         Image: Construction in the second se	(inches)	Color (moist)	%			Type <sup>1</sup>	Loc <sup>2</sup>				
Image: Secondary Indicators       Image: Secondary Indicators (Image: Secondary Indicators (	0-24	10YR3/1	80			С	М				
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedin (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Stripped Matrix (S4)       Iron-Manganese Masses (F12)         Black Histic (A3)       Learny Gleyed Matrix (S6)       Other (Explain in Remarks)         Black Histic (A3)       Learny Gleyed Matrix (F2)       Other (Explain in Remarks)         Stratified Layers (A5)       Learny Gleyed Matrix (F2)       *         Sandy Muck (A10)       Depleted Matrix (F2)       **         Sandy Muck (Mineral (S1)       Redox Dark Surface (F7)       **         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       **         Muck (Pater Saile Carl (Pater Sai				5YR4/6	10			Loam			
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedin (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Stripped Matrix (S4)       Iron-Manganese Masses (F12)         Black Histic (A3)       Learny Gleyed Matrix (S6)       Other (Explain in Remarks)         Black Histic (A3)       Learny Gleyed Matrix (F2)       Other (Explain in Remarks)         Stratified Layers (A5)       Learny Gleyed Matrix (F2)       *         Sandy Muck (A10)       Depleted Matrix (F2)       **         Sandy Muck (Mineral (S1)       Redox Dark Surface (F7)       **         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       **         Muck (Pater Saile Carl (Pater Sai											
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedin (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Stripped Matrix (S4)       Iron-Manganese Masses (F12)         Black Histic (A3)       Learny Gleyed Matrix (S6)       Other (Explain in Remarks)         Black Histic (A3)       Learny Gleyed Matrix (F2)       Other (Explain in Remarks)         Stratified Layers (A5)       Learny Gleyed Matrix (F2)       *         Sandy Muck (A10)       Depleted Matrix (F2)       **         Sandy Muck (Mineral (S1)       Redox Dark Surface (F7)       **         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       **         Muck (Pater Saile Carl (Pater Sai											
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedin (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Stripped Matrix (S4)       Iron-Manganese Masses (F12)         Black Histic (A3)       Learny Gleyed Matrix (S6)       Other (Explain in Remarks)         Black Histic (A3)       Learny Gleyed Matrix (F2)       Other (Explain in Remarks)         Stratified Layers (A5)       Learny Gleyed Matrix (F2)       *         Sandy Muck (A10)       Depleted Matrix (F2)       **         Sandy Muck (Mineral (S1)       Redox Dark Surface (F7)       **         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       **         Muck (Pater Saile Carl (Pater Sai											
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedin (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Stripped Matrix (S4)       Iron-Manganese Masses (F12)         Black Histic (A3)       Learny Gleyed Matrix (S6)       Other (Explain in Remarks)         Black Histic (A3)       Learny Gleyed Matrix (F2)       Other (Explain in Remarks)         Stratified Layers (A5)       Learny Gleyed Matrix (F2)       *         Sandy Muck (A10)       Depleted Matrix (F2)       **         Sandy Muck (Mineral (S1)       Redox Dark Surface (F7)       **         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       **         Muck (Pater Saile Carl (Pater Sai											
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedin (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Stripped Matrix (S4)       Iron-Manganese Masses (F12)         Black Histic (A3)       Learny Gleyed Matrix (S6)       Other (Explain in Remarks)         Black Histic (A3)       Learny Gleyed Matrix (F2)       Other (Explain in Remarks)         Stratified Layers (A5)       Learny Gleyed Matrix (F2)       *         Sandy Muck (A10)       Depleted Matrix (F2)       **         Sandy Muck (Mineral (S1)       Redox Dark Surface (F7)       **         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       **         Muck (Pater Saile Carl (Pater Sai							+				
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedin (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Stripped Matrix (S4)       Iron-Manganese Masses (F12)         Black Histic (A3)       Learny Gleyed Matrix (S6)       Other (Explain in Remarks)         Black Histic (A3)       Learny Gleyed Matrix (F2)       Other (Explain in Remarks)         Stratified Layers (A5)       Learny Gleyed Matrix (F2)       *         Sandy Muck (A10)       Depleted Matrix (F2)       **         Sandy Muck (Mineral (S1)       Redox Dark Surface (F7)       **         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       **         Muck (Pater Saile Carl (Pater Sai											
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedin (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Stripped Matrix (S4)       Iron-Manganese Masses (F12)         Black Histic (A3)       Learny Gleyed Matrix (S6)       Other (Explain in Remarks)         Black Histic (A3)       Learny Gleyed Matrix (F2)       Other (Explain in Remarks)         Stratified Layers (A5)       Learny Gleyed Matrix (F2)       *         Sandy Muck (A10)       Depleted Matrix (F2)       **         Sandy Muck (Mineral (S1)       Redox Dark Surface (F7)       **         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       **         Muck (Pater Saile Carl (Pater Saile Pater (Pater Saile (Pater (Pater Saile Carl (Pater Saile Carl (Pater											
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedin (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Stripped Matrix (S4)       Iron-Manganese Masses (F12)         Black Histic (A3)       Learny Gleyed Matrix (S6)       Other (Explain in Remarks)         Black Histic (A3)       Learny Gleyed Matrix (F2)       Other (Explain in Remarks)         Stratified Layers (A5)       Learny Gleyed Matrix (F2)       *         Sandy Muck (A10)       Depleted Matrix (F2)       **         Sandy Muck (Mineral (S1)       Redox Dark Surface (F7)       **         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       **         Muck (Pater Saile Carl (Pater Saile Pater (Pater Saile (Pater (Pater Saile Carl (Pater Saile Carl (Pater											
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedin (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Stripped Matrix (S4)       Iron-Manganese Masses (F12)         Black Histic (A3)       Learny Gleyed Matrix (S6)       Other (Explain in Remarks)         Black Histic (A3)       Learny Gleyed Matrix (F2)       Other (Explain in Remarks)         Stratified Layers (A5)       Learny Gleyed Matrix (F2)       *         Sandy Muck (A10)       Depleted Matrix (F2)       **         Sandy Muck (Mineral (S1)       Redox Dark Surface (F7)       **         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       **         Muck (Pater Saile Carl (Pater Saile Pater (Pater Saile (Pater (Pater Saile Carl (Pater Saile Carl (Pater											
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedin (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Stripped Matrix (S4)       Iron-Manganese Masses (F12)         Black Histic (A3)       Learny Gleyed Matrix (S6)       Other (Explain in Remarks)         Black Histic (A3)       Learny Gleyed Matrix (F2)       Other (Explain in Remarks)         Stratified Layers (A5)       Learny Gleyed Matrix (F2)       *         Sandy Muck (A10)       Depleted Matrix (F2)       **         Sandy Muck (Mineral (S1)       Redox Dark Surface (F7)       **         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       **         Muck (Pater Saile Carl (Pater Saile Pater (Pater Saile (Pater (Pater Saile Carl (Pater Saile Carl (Pater	<sup>1</sup> Type: C=	Concentration. D=De	epletion.	RM=Reduced Matri	x. CS=C	overed o	or Coated S	Sand Grains.	2 Location: PL=Pore Lining, M=Matrix		
Histosol (A1)       Sandy Gleyed Matrix (S4)       Coast Prairie Redox (A16) <sup>5</sup> Histosol (A1)       Sandy Redox (S5)       Iron-Manganese Masses (F12)         Black Histic (A3)       Loarny Mucky Mineral (F1)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Loarny Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Redox Dark Surface (F6)       and Micky Mineral (S1)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:       Peptervectore       No         Pept (inches):       Hydric Soil Present?       Yes       X       No         Permarks:       Distinct Iron masses       Surface Soil Cracks (B6)       Dry-Season Water Table (C2)       Cray and Fabre (C2)       Cray in the composition (D2)       Surface Soil Cracks (B6)       Dry-Season Water Table (C2)       Cray in the composition (D2)       Surface Soil Cracks (B6)       Dry-Season Water Table (C2)       Cray in the composition (D2)       Surface Soil Cracks (B6)       Dry-Season Water Table (C2)       Cray in the composition (D2)       Surface Soil Cracks (B6)       Dry-Season Water Table (C2)       Cray in the compositic (D3)<	Hvdric S	oil Indicators:	<u>opie</u> ,		.,	0.0.04					
Histic Epipedion (A2)       Sandy Redox (S5)       Iron-Manganese Masses (F12)         Black Histic (A3)       Loamy Mucky Mineral (F1)       Other (Explain in Remarks)         Stratified Layers (A5)       Loamy Mucky Mineral (F1)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Redox Dark Surface (F6)       3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:       Hydro Soil Present?       Yes       X       No         Pepth (inches):       Hydro Soil Present?       Yes       X       No				Sar	dy Gley	ed Matr	ix (S4)				
Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Startified Layers (A5)       Loamy Gleyed Matrix (F2)         Depleted Below Dark Surface (A11)       X Redox Dark Surface (F6)         Trick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F7)         Wetland Hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):         Type:         Depth (inches):         Petht (inches):         Petht (inches):         Primary Indicators (minimum of one is required; check all that apply)         Surface Water (A1)       Water-Stained Leaves (B9)         Surface Water (A1)       Aquatic Fauna (B13)         Surface Water (A1)       Hydrogen Sulfide Odor (C1)         Sufface Mater Marks (B1)       Hydrogen Sulfide Odor (C1)         Sufface Mater Marks (B1)       Hydrogen Sulfide Odor (C1)         Sediment Deposits (B2)       Ooideed Rhizospheres on Living Roots (C3)         Sufface Water Torus (B4)       Reseave Vegetad Coraces Sulface (C7)         Mag Mat or Crust (B4)       Reseave Of Weter Torus (			)				<b>、</b> ,	-			
Strattfed Layers (A5)       Loamy Gleyed Matrix (F2)         Depleted Below Dark Surface (A11)       Redox Dark Surface (F6)         Thick Dark Surface (A12)       Depleted Matrix (F3)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         * Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Depleted Matrix (F2)       Hydric Soil Present?         Yes       X         No								_	Other (Explain in Remarks)		
2 cm Muck (A10)											
□       Depleted Below Dark Surface (A11)       X       Redox Dark Surface (F6)       Depleted Dark Surface (F7)       3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Redox Depressions (F8)       wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Hydric Soil Present?       Yes       X       No         Remarks:       Distinct Iron masses       Hydric Soil Present?       Yes       X       No         HYDROLOGY         Wetland Hydrology Indicators:       Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water Stained Leaves (B9)       Surface Soil Cracks (86)         By Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Saturation Tyrish Burrows (C8)         Sediment Deposits (B2)       Oxidaed Rhizospheres on Uning Roots (C3)       Saturation (D1)         Agal Mat or Crust (B4)       Recent iron Reduction on Tilled Soil (C6)       Geomorphic Positin (D2)         I'ron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test			5)								
Sandy Mucky Mineral (S1)       Redox Depressions (F8)       wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):									3 Indiantana of huderney dia unantetian and		
Restrictive Layer (if observed):         Type:					iox Depi	65510115	ы (го)				
Type:			•	5)							
Depth (inches):       Hydric Soil Present?       Yes       X       No         Remarks:       Distinct Iron masses         HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         Baturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydroge Sulface dor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Uving Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C3)       Saturation Visible on Aerial Imagery (C9)         Innudation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:         Surface Water Present?       Yes       No       X       Depth:       in         Mater Table Present?       Yes       No       X       Depth:       in         Surface Water Present?       Yes		ve Layer (If obse	rvea):								
Remarks:       Distinct Iron masses         HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Innudation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       Surface Water Present?       Yes       No       X       Depth:       in         Surface Water Present?       Yes       No       X       Depth:       in       Secondary Indicators (Materia Imagery C9)       Secondary Indica Or Stressed Plants (D1)         Gauge							Uvdric S	oil Procont?			
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Dirift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Sectomorphic Position (D2)         Inon dation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       FAC-Neutral Test (D5)         Surface Water Present?       Yes       No       Depth:       in         Water Table Present?       Yes       No       Z       Depth:       in         Mater Table Present?       Yes       No       Z       Depth:       in         Gaturation Present?       Yes       No       Z       Depth:       in							Hyunc S	on Present?			
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Surface Soil Cracks (B6)       Drainage Patterns (B10)       Drainage Patterns (B10)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Algal Mat or Crust (B4)       Recent Iron Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduced Iron (C4)       Sedimer Explore         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)       X         Field Observations:         Surface Water Present?       Yes       No       X         Saturation Present?       Yes       No       X         Includes capillary fringe)       Depth:       in       in         Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Remarks:	Remarks:	Distinct Iron ma	asses								
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Surface Soil Cracks (B6)       Drainage Patterns (B10)       Drainage Patterns (B10)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Algal Mat or Crust (B4)       Recent Iron Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduced Iron (C4)       Geomorphic Position (D2)         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       No       X         Surface Water Present?       Yes       No         Saturation Present?       Yes       No         Mater Table Present?       Yes       No         Mater Table Present?       Yes       No         Saturation Present?       Yes       No         Mater Table Present?       Yes       No         Depth:       in<											
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Surface Soil Cracks (B6)       Drainage Patterns (B10)       Drainage Patterns (B10)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Algal Mat or Crust (B4)       Recent Iron Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduced Iron (C4)       Geomorphic Position (D2)         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       No       X         Surface Water Present?       Yes       No         Saturation Present?       Yes       No         Mater Table Present?       Yes       No         Mater Table Present?       Yes       No         Saturation Present?       Yes       No         Mater Table Present?       Yes       No         Depth:       in<											
Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Flants (B13)       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       X       FAC-Neutral Test (D5)         Surface Suifled Observations:       No       X       Depth:       in         Surface Corded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Remarks:	HYDRO	LOGY									
Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crarfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       FAC-Neutral Test (D5)         Surface Water Present?       Yes       No       X       Depth:       in         Water Table Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Remarks:         Prepared by:       KRG											
High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       Surface Water Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in       in         Gincludes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Prepared by:       KRG			of one					<u>Se</u>			
Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       Surface Water Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in       Wetland Hydrology Present       Yes       X       No         Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Prepared by:       KRG			•								
Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       Saturation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)       FAC-Neutral Test (D5)         Field Observations:       Surface Water Present?       Yes       No       X         Saturation Present?       Yes       No       X       Depth:       in         includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Prepared by:       KRG			(2)	Aqu	atic ⊦au	ina (B13	3)	. <u> </u>			
Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       FAC-Neutral Test (D5)         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       Surface Water Present?       Yes       No         Sutration Present?       Yes       No       X       Depth:       in         Mater Table Present?       Yes       No       X       Depth:       in         Includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Prepared by:       KRG											
Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       FAC-Neutral Test (D5)         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)       in         Water Table Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Prepared by:       KRG			(P2)								
Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       Surface Water Present?       Yes       No       X       Depth:       in         Sutrace Water Present?       Yes       No       X       Depth:       in       in         Saturation Present?       Yes       No       X       Depth:       in       in         Cincludes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Prepared by:       KRG			(02)			•	•				
Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       Other (Explain in Remarks)         Field Observations:       Other (Explain in Remarks)         Surface Water Present?       Yes       No         X       Depth:       in         Water Table Present?       Yes       No         X       Depth:       in         Saturation Present?       Yes       No         X       Depth:       in         (includes capillary fringe)       Depth:       in         Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:         Remarks:       Prepared by:       KRG			34)								
Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       Surface Water Present? Yes       No       X       Depth:       in         Water Table Present?       Yes       No       X       Depth:       in       in         Saturation Present?       Yes       No       X       Depth:       in       in         Gauge or Well Data (Stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Remarks:       Prepared by:       KRG			)					· · ·			
Field Observations:         Surface Water Present?       Yes       No       X       Depth:       in         Water Table Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in         Includes capillary fringe)       No       X       Depth:       in       Wetland Hydrology Present       Yes       X       No         Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Remarks:			erial Ima						_ ( )		
Surface Water Present?       Yes       No       X       Depth:       in       in         Water Table Present?       Yes       No       X       Depth:       in       in         Saturation Present?       Yes       No       X       Depth:       in       in         (includes capillary fringe)       Yes       Mo       X       Depth:       in       in         Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Remarks:       Prepared by:       KRG	S	parse Vegetated Con	cave Su	face(B8) Oth	er (Expla	ain in R	emarks)				
Surface Water Present?       Yes       No       X       Depth:       in       in         Water Table Present?       Yes       No       X       Depth:       in       in         Saturation Present?       Yes       No       X       Depth:       in       in         (includes capillary fringe)       Yes       Mo       X       Depth:       in       in         Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Remarks:       Prepared by:       KRG	Field Ob	servations:									
Water Table Present?       Yes       No       X       Depth:       in       in       Wetland Hydrology Present       Yes       X       No			Yes	No X D	epth:		in				
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available: Remarks: Prepared by: KRG	Water Ta	ble Present?	Yes	No X D	epth:		in				
Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:           Remarks:   Prepared by: KRG	Saturation	n Present?	Yes		epth:		-	etland Hydrol	logy Present Yes <u>X</u> No		
Remarks: Prepared by: KRG			-								
Prepared by: KRG	Describe	Recorded Data (str	ream ga	uge, monitoring we	ll, aerial	photog	raphs, pre	vious inspecti	ions), if available:		
Prepared by: KRG											
Prepared by: KRG	Domorto										
	Remarks:										
									Prenared hv: KPC		
									Checked by: ESM		

Project/Site: F	Replacement Terminal EA	С	ity/County:	Des Moine	es/ Polk Sampling Date: 5/8/18
	Des Moines International Airpo	State:	Iowa Sampling Point: DP-15		
	Katie Goff		S 29-32, T78N, R24W		
	errace, etc.): Low-lying area				nvex, none): Concave
Slope (%): 0-5	Lat: 41.5261046			67691	Datum: Wetland 7
• • • • • • • • • • • • • • • • • • • •	11B - Colo-Judson silty clay		•		/I Classification: PEMCx
-	onditions on the site typical for this		-		ormal (see Section 2.6)
	soil or hydrology	-	/ disturbed?		I Circumstances" present? Y X N
·	soil or hydrology		/ problematic		ed, explain any answers in Remarks)
		•	•		
SUMMARY OF FIN	DINGS – Attach site map sł	nowing sar	npling point	locations,	transects, important features, etc.
Hydrophytic Vegetatio		No		Compled Ar	
Hydric Soil Present?		No		Sampled Ar a Wetland?	
Wetland Hydrology Pr	resent? Yes X	No	-	a Wolland.	
Remarks: Geomorp	hic low spot				
VEGETATION - Us	e scientific names of plants.				
Tree Stratum >3" DBH	(Plot size: 30' radius)	Absolute	Dominant	Indicator	Dominance Test Worksheet:
	(11013)20.00 10003)	% Cover	Species?	Status	
1 2					Number of Dominant Species that are OBL, FACW, or FAC (A):
3					Total Number of Dominant Species
4					Across All Strata (B):
5					Percent of Dominant Species That
	20% Total Cover		= Total Cov	'er	are OBL, FACW, or FAC (A/B):
Sapling/Shrub Stratum	<3" DBH or > 1 m tall (Plot s	size: 15' radi	us)		Prevalence Index Worksheet:
1					Total % Cover of: Multiply by:
2					OBL species X 1
3					FACW species X 2
4					FAC species X 3
5	200% <b>T</b> 1 1 2				FACU species X 4
	20% Total Cover		= Total Cov	ver	UPL species X 5
Herb Stratum non-wood	dy or woody < 1 m tall (Plot s	size: 5' radiu	s)		Totals (A) (B)
	sh (Eleocharis palustris)	30	Ý	OBL	Prevalence Index = B/A = Hydrophytic Vegetation Indicators:
	si (Eleocharis palustris) s (Phalaris arundinacea)	20	Y Y	FACW	1-Rapid Test for Hydrophytic Veg
Softstem Bulrush (	,				
s tabernaemontani)	-	30	Y	OBL	X 2-Dominance Test is > 50%
4 Cattail species (Typ	oha sp.)	10	N	OBL	3-Prevalence Index is ≤3.0 <sup>1</sup>
5					4-Morphological Adaptations
6 7					(Provide supporting data in Remarks)
8					Problematic Hydrophytic
9					Vegetation <sup>1</sup> (Explain)
10					<sup>1</sup> Indicators of hydric soil and wetland
11					hydrology must be present, unless
50% Total Cover	45 20% Total Cover 18	90	= Total Cov	ver	disturbed or problematic.
Woody Vine Stratum >	1 m tall (Plot size: 30	' radius)			
1 2					Hydrophytic Vegetation Yes X No
3					Present?
	20% Total Cover		= Total Cov	rer	
Remarks: Vegetation	n passes the FAC-Neutral test.				

SOIL								Sampling Point: DP-15			
Profile Description: (Describe to the depth needed to document the indicator to confirm the absence of indicators.)											
Depth Matrix Redox Features Remarks											
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	T C TI C			
0-2	10YR2/1	100					Muck	Roots			
2-20	10YR4/2	60	10YR4/6 5YR4/6	20 20	С	М	Silty Clay Loam	A few pebbles			
<sup>1</sup> Type: C=	<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. 2 Location: PL=Pore Lining, M=Matrix										
Hydric Soil Indicators: Indicator for Problematic Hydric Soils <sup>3</sup> :											
	Hydric Soil Indicators: Indicator for Problematic Hydric Soils*: Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16)										
	listic Epipedon (A2	)			ox (S5)		_	Iron-Manganese Masses (F12)			
Black Histic (A3) Stripped Matrix (S6) Other (Explain in Remarks)											
	lydrogen Sulfide (A										
	Stratified Layers (As	5)			yed Mat						
	cm Muck (A10)				latrix (F3						
	Depleted Below Dar							3 leading to an a burger but in the second strength and			
	Thick Dark Surface Sandy Mucky Miner				ressions	face (F7)		<sup>3</sup> Indicators of hydrophytic vegetation and			
	5 cm Mucky Peat or			ox Dep	ressions	5 (ГО)		wetland hydrology must be present, unless disturbed or problematic.			
	-		5)								
	ve Layer (if obse	rvea):									
Type: Depth (ind	ches):					Hydric So	oil Present?	Yes X No			
Remarks:	· · · · · · · · · · · · · · · · · · ·										
Tternarks.											
HYDRO	LOGY										
Wetland	Hydrology Indica	ators									
			is required; check a	all that a	annly)		Se	condary Indicators (minimum of 2 required)			
	Surface Water (A1)					ves (B9)	00	Surface Soil Cracks (B6)			
	High Water Table (A				una (B13		·	Drainage Patterns (B10)			
	Saturation (A3)	)			ic Plants			Dry-Season Water Table (C2)			
	Vater Marks (B1)		Hvd	roaen S	Sulfide C	Ddor (C1)		Crayfish Burrows (C8)			
	Sediment Deposits	(B2)				on Living Ro	oots (C3)	Saturation Visible on Aerial Imagery (C9)			
	Drift Deposits (B3)	( )				ed Iron (C4		Stunted or Stressed Plants (D1)			
	Algal Mat or Crust (I	B4)				n on Tilled S	·	Geomorphic Position (D2)			
	ron Deposits (B5)	,	X Thir				X	FAC-Neutral Test (D5)			
Ir	nundation Visible on A	Aerial Ima	igery(B7) Gau	ige or V	Vell Data	a (D9)		-			
XS	Sparse Vegetated Cor	ncave Sur	face(B8) Oth	er (Exp	lain in R	emarks)					
Field Ob	servations:										
	Vater Present?	Yes	X No D	epth:	2	in					
Water Ta	ble Present?	Yes		epth:	0	in					
Saturation	n Present?	Yes		epth:	0	in We	tland Hydrolo	ogy Present Yes X No			
(includes	(includes capillary fringe)										
Describe	Recorded Data (str	ream ga	uge, monitoring we	ll, aeria	l photog	raphs, prev	vious inspectio	ons), if available:			
Pomerke:											
Remarks:											
								Prepared by: KRG			
								Checked by: ESM			

Project/Site:	Replacement Terminal EA Des Moines International Airpo		ity/County:	Des Moine State:		npling Date: npling Point:	5/8/18 DP-16	
Applicant/Owner:					DP-10			
Investigator(s):	Katie Goff		ection, Town					
Landform (hillslope,			ocal Relief (c			onvex		
Slope (%): 0-5	Lat: 41.5262035	Lo	ong: -93.6	67723	Datum: L	Jpland		
Soil Map Unit Name	: 11B - Colo-Judson silty clay	loams, occa	asionally floo	ded NW	I Classification:	None		
Are climatic/hydrologic	conditions on the site typical for thi	is time of year	? No, v	vetter than n	ormal (see Sect	ion 2.6)		
Are vegetation	soil or hydrology	significantly	/ disturbed?		I Circumstances"	-	ΎΧΝ	
Are vegetation	soil or hydrology		problematic	? (if neede	d, explain any ar	swers in Rem		—
	NDINGS – Attach site map s ion Present? Yes X	howing san	npling point	locations,	transects, impo	ortant feature	⊭s, etc.	_
Hydrophytic Vegetat Hydric Soil Present?		No X	ls the s	Sampled Ar	ea Yes		No X	
Wetland Hydrology I		No X		a Wetland?				
			-					
Remarks:								
VEGETATION - U	Ise scientific names of plants	6.						
Tree Stratum >3" DBI	H (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Te	st Worksheet	:	
1					Number of Dom		that 1	
2					are OBL, FACW	. ,		
3					Total Number of		ecies 1	
4					Across All Strat	. ,		
5	20% Total Cover				Percent of Dom are OBL, FACW			)
	20% Total Cover		= Total Cov	ver	ale OBL, FACIN	I, UI FAC (A/B	).	
Sapling/Shrub Stratur	$\underline{m}$ <3" DBH or > 1 m tall (Plot	size: 15' radi	us)		Prevalence Ind	lex Workshee	t:	
1					Total % Cov	er of: <u>N</u>	<u>Multiply by:</u>	
2					OBL species	X ?	I	
3					FACW species	X 2	2	
4					FAC species	X 3	3	
5					FACU species	X4		
	20% Total Cover	4	= Total Cov	rer	UPL species	X 5		
Harb Stratum pap wa	ody or woody < 1 m tall (Plot	size: 5' radiu	<u>.</u>		Totals (A)	(E	5)	
	, , , , , , , , , , , , , , , , , , ,	Size. 5 Taulu	5)			Index = B/A		
1 Reed Canary Gra	ss (Phalaris arundinacea)	100	Y	FACW	Hydrophytic V	egetation Indi	cators:	
	on ( <i>Taraxacum officinale</i> )	10	N	FACU		Test for Hydro	1 2 0	
	eed (Stellaria media)	10	N	FACU		ance Test is >		
4						ence Index is		
5						ological Adapt		
6						supporting da	ita in	
7					Remarks		1° -	
8 9						atic Hydrophy on <sup>1</sup> (Explain)	liC	
10					-		watland	
11					<sup>1</sup> Indicators of h hydrology must			
50% Total Cover	60 20% Total Cover 24	120	= Total Cov	ver	disturbed or pro		1000	
Woody Vine Stratum	> 1 m tall (Plot size: 30	0' radius)						
1		ļ			Hydrophytic			
2					Vegetation	Yes X	No	_
3					Present?			
	20% Total Cover	<u> </u>	= Total Cov	ver				
Remarks: Vegetati	on passes the FAC-Neutral test.							

Profile Description: (Describe to the depth needed to document the indicator to confirm the absence of indicators.)       Remarks         Checked Depth       Color (Moist)       %       Color (Moist)       %       Type I       Loc <sup>2</sup> Texture       Remarks         Color (Moist)       %       Color (Moist)       %       Type I       Loc <sup>2</sup> Texture       Remarks         20-24       10YRA/1       40       10YRA/8       10       C       M       Silt (Clay         20-24       10YRA/1       40       10       10       10       10       10         20-24       10YRA/1       100       10       10       10       10       10       10         20-24       10YRA/1       100       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10	SOIL									Sampling	
Control       Structure       Network       Network         0-20       10/YR4/1       90       10/YR4/6       10       C       M       Structure       Network         20-24       10/YR4/1       90       10/YR4/6       10       C       M       Structure       Network         20-24       10/YR4/1       100       Image: Control       Network       Network       Network         20-24       10/YR4/1       100       Image: Control       Network       Network       Network         20-24       10/YR4/6       Image: Control       Image: Control       Network       Network       Network         20-24       10/YR4/6       Image: Control       Image: Control       Image: Control       Network       Network       Network         20-24       10/YR4/6       Image: Control       Image: Control       Image: Control       Network       N											
0-20         10YR4/1         90         10YR4/6         10         C         M         Silly Clay Loam         Pebbles           20-24         10YR3/1         100         Image: the second s	-								-	Remark	S
D2-20       10 FKM1       10       C       M       Leam         20-24       10 YR3/1       100       Image: the state of th	(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
20-24       10YR3/1       100	0-20	10YR4/1	90	10YR4/6	10	С	М				
Type: C-Concentration. D-Depietion, RM-Reduced Matrix, CS-Covered or Coated Sand Grains.       2 Location: PL-Pove Lining, M-Matrix.         Type: C-Concentration. D-Depietion, RM-Reduced Matrix, CS-Covered or Coated Sand Grains.       2 Location: PL-Pove Lining, M-Matrix.         Type: C-Concentration. D-Depietion, RM-Reduced Matrix, CS-Covered or Coated Sand Grains.       2 Location: PL-Pove Lining, M-Matrix.         Type: C-Concentration. D-Depietion, RM-Reduced Matrix, (SA)       Indicator of Problematic Hydric Solis': Coast Prints Padrox (Af)         Histic Exposed on (A2)       Sandy Redox (S5)       Other (Explain in Remarks)         Histic Exposed on (A2)       Sandy Matrix, (SA)       Other (Explain in Remarks)         Depieted Below Dark Surface (A10)       Depieted Matrix, (S3)       Other (Explain in Remarks)         Depieted Below Dark Surface (A11)       Redox Depressions (F3) <sup>3</sup> Indicators of hydrophylic vegetation and weithed protology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:       Protection on a sequired: check all that apply!       Secondary Indicators (minimum of 2 required)         Surface Water (A11)       Water Staline Leaves (B9)       Surface Staline Carks (B10)       Dy-Season Water Table (C2)         Surface Water (A11)       Water Staline Check all that apply!       Depieted Matrix (C1)       Dy-Season Mater Table (C2)         Surface Water (A11)       Water Staline Carks (B13)       Dy-Season Mater Ta	20-24	10YR3/1	100					Silty Clay	Pehbles		
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedon (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Loamy Gleyed Matrix (S6)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Cast Prairie Redox (A16)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Dark Surface (A12)       Depleted Matrix (F2)       Sindicators of hydrophytic vegetation and wether of the present (Intersection and wether of the present, unless disturbed or problematic.         Sem Muck (Yalo)       Depleted Dark Surface (F7)       Sindicators of hydrophytic vegetation and wether of the present (Intersection and wether of the present)         Type:       Deplet (Inches):       Hydric Soil Present?       Yes       X       No         Perimary Indicators (minimum of one is required: check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Creaks (B6)       Drainage Patterns (B10)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Creaks (B6)       Drainage Patterns (B10)         Surface Water (A1)       Aquatic Fauna (B13)       Drainage Patterns (B10)       Drainage Patterns (B10)       Drainage Patterns (B10)	20 24	1011(0/1	100					Loam	T CODICS		
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedon (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Loamy Gleyed Matrix (S6)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Cast Prairie Redox (A16)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Dark Surface (A12)       Depleted Matrix (F2)       Sindicators of hydrophytic vegetation and wether of the present (Intersection and wether of the present, unless disturbed or problematic.         Sem Muck (Yalo)       Depleted Dark Surface (F7)       Sindicators of hydrophytic vegetation and wether of the present (Intersection and wether of the present)         Type:       Deplet (Inches):       Hydric Soil Present?       Yes       X       No         Perimary Indicators (minimum of one is required: check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Creaks (B6)       Drainage Patterns (B10)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Creaks (B6)       Drainage Patterns (B10)         Surface Water (A1)       Aquatic Fauna (B13)       Drainage Patterns (B10)       Drainage Patterns (B10)       Drainage Patterns (B10)											
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedon (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Loamy Gleyed Matrix (S6)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Cast Prairie Redox (A16)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Dark Surface (A12)       Depleted Matrix (F2)       Sindicators of hydrophytic vegetation and wether of the present (Intersection and wether of the present, unless disturbed or problematic.         Sem Muck (Yalo)       Depleted Dark Surface (F7)       Sindicators of hydrophytic vegetation and wether of the present (Intersection and wether of the present)         Type:       Deplet (Inches):       Hydric Soil Present?       Yes       X       No         Perimary Indicators (minimum of one is required: check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Creaks (B6)       Drainage Patterns (B10)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Creaks (B6)       Drainage Patterns (B10)         Surface Water (A1)       Aquatic Fauna (B13)       Drainage Patterns (B10)       Drainage Patterns (B10)       Drainage Patterns (B10)											
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedon (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Loamy Gleyed Matrix (S6)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Cast Prairie Redox (A16)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Dark Surface (A12)       Depleted Matrix (F2)       Sindicators of hydrophytic vegetation and wether of the present (Intersection and wether of the present, unless disturbed or problematic.         Sem Muck (Yalo)       Depleted Dark Surface (F7)       Sindicators of hydrophytic vegetation and wether of the present (Intersection and wether of the present)         Type:       Deplet (Inches):       Hydric Soil Present?       Yes       X       No         Perimary Indicators (minimum of one is required: check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Creaks (B6)       Drainage Patterns (B10)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Creaks (B6)       Drainage Patterns (B10)         Surface Water (A1)       Aquatic Fauna (B13)       Drainage Patterns (B10)       Drainage Patterns (B10)       Drainage Patterns (B10)											
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedon (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Loamy Gleyed Matrix (S6)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Cast Prairie Redox (A16)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Dark Surface (A12)       Depleted Matrix (F2)       Sindicators of hydrophytic vegetation and wether of the present (Intersection and wether of the present, unless disturbed or problematic.         Sem Muck (Yalo)       Depleted Dark Surface (F7)       Sindicators of hydrophytic vegetation and wether of the present (Intersection and wether of the present)         Type:       Deplet (Inches):       Hydric Soil Present?       Yes       X       No         Perimary Indicators (minimum of one is required: check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Creaks (B6)       Drainage Patterns (B10)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Creaks (B6)       Drainage Patterns (B10)         Surface Water (A1)       Aquatic Fauna (B13)       Drainage Patterns (B10)       Drainage Patterns (B10)       Drainage Patterns (B10)											
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedon (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Straybed Matrix (S4)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)       Other (Explain in Remarks)         Depleted Below Dark Surface (A12)       Depleted Matrix (F2)       3 Indicators of hydrophytic vegetation and wetratin hydrology must be present, unless disturbed or problematic.         Sandy Mucky Mineral (S1)       Redox Depressions (F6)       3 Indicators of hydrophytic vegetation and wetratin hydrology must be present, unless disturbed or problematic.         Type:       Depleted Tark Surface (F7)       Present?       Yes       X       No         Pepth (inches):       Hydric Soil Present?       Yes       X       No											
Hydric Soil Indicators:       Sandy Gleyed Matrix (S4)       Indicator for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedon (A2)       Sandy Redox (S5)       Coast Prairie Redox (A16)         Black Histic (A3)       Straybed Matrix (S4)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)       Other (Explain in Remarks)         Depleted Below Dark Surface (A12)       Depleted Matrix (F2)       3 Indicators of hydrophytic vegetation and wetratin hydrology must be present, unless disturbed or problematic.         Sandy Mucky Mineral (S1)       Redox Depressions (F6)       3 Indicators of hydrophytic vegetation and wetratin hydrology must be present, unless disturbed or problematic.         Type:       Depleted Tark Surface (F7)       Present?       Yes       X       No         Pepth (inches):       Hydric Soil Present?       Yes       X       No		Concontration D=D	oplotion	PM-Roducod Matri	x CS-0	Covered o	vr Coatod S	Sand Grains	2 Location: Pl	-Poro Lining	N-Matrix
Histosol (A1)       Sandy Gleyed Matrix (S4)       Coast Priarie Redox (A16) <sup>-</sup> Histosol (A1)       Sandy Redox (S5)       Lron-Manganese Masses (F12)         Black Histic (A3)       Loamy Mucky Mineral (F1)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Redox Dark Surface (F6)       other (Explain in Remarks)         Depleted Below Dark Surface (A12)       Depleted Dark Surface (F6)			epietion,	RIM-Reduced Main	x, US=U	Jovered 0	or Coaled a				
Histic Epipedon (A2)       Sandy Redox (S5)       Iron-Manganese Masses (F12)         Black Histic (A3)       Loamy Gleyed Matrix (S6)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Stratified Layers (A5)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Redox Dark Surface (F6)				Son	dy Clo	od Matri	v (S4)				
Black Histic (A3)       Stripped Matrix (S6)       Other (Explain in Remarks)         Black Histic (A3)       Loamy Gleyed Matrix (F3)       Other (Explain in Remarks)         Stratified Layers (A5)       Loamy Gleyed Matrix (F2)       Depleted Below Dark Surface (A11)       X Redox Dark Surface (F6)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       * Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:       Pepleted Dark Surface (F7)       * Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:       Pepleted Dark Surface (F8)       No         Remarks:       Hydric Soil Present?       Yes       X       No         Primary Indicators (minimum of one is required; check all that apply)       Surface Soil Cracks (B6)       Surface Soil Cracks (B6)         Surface Water (A1)       Water Stained Leaves (B9)       Surface Soil Cracks (B6)       Dry-Season Water Table (C2)         Surface Soil Cracks (B1)       Hydrogen Suifide Odor (C1)       Crayfish Burrows (C8)       Surface Soil Cracks (B6)         Sediment Deposits (B2)       Oxidaed Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)       Sutrated or Stressed Plants (D1)         Algal Mat or Crust (B4)       Rec			`				x (34)	_			
Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (K5)       Loamy Gleyed Matrix (F2)         Depleted Below Dark Surface (A11)       Redox Dark Surface (F6)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         sandy Mucky Mineral (S1)       Redox Depressions (F8)         wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):         Type:         Depth (inches):         Perth (inches):         Primary Indicators (minimum of one is required; check all that apply)         Surface Water (A1)         Surface Water (A1)         Surface Water (A1)         Mucky Peat Pable (A2)         Aquatic Fauna (B13)         Surface Water (A1)         Surface Water (A1)         Surface Water (A1)         Surface Water (A1)         Mucky Peat Pable (A2)         Aquatic Fauna (B13)         The Aquatic Plants (B14)         Dry-Season Water Table (C2)         Outdated Rhizospheres on Living Roots (C3)         Saturation (A3)         Hydrogen Sulfide Odor (C1)         Secondary Indicators (B1)         Hydrogen Sulfide Odor (C1)         Secondary Indicators (B2)         Outdated Rhizosphero			)				<b>`</b>	—			
Stratified Layers (A5)       Loamy Cleved Matrix (F2)         2 cm Muck (A10)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X Redox Dark Surface (F7)         Stratified Layers (A12)       Depleted Matrix (F3)         Sendy Mucky Mineral (S1)       Redox Depressions (F8)         ************************************								-	Other (Exp	lain in Rema	arks)
2 cm Muck (A10)       Depleted Matrix (F3)         Bepleted Below Dark Surface (A12)       Redox Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         * S cm Mucky Peat or Peat (S3)       Redox Depressions (F8)         * Restrictive Layer (if observed):       reget to the served):         Type:       Depth (inches):         Pepth (inches):       Hydric Soil Present?         Yes       X       No         Remarks:       Hydric Soil Present?       Yes         Yes       X       No         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         Surface Water (A1)       High Water Table (A2)       Aquatic Fauna (B13)       Dry-Season Water Table (C2)         Staturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)       Saturation Visible on Aerial Imagery (C9)         Staturation Figure Water (B1)       Oxidized Rinzspheres on Living Roots (C3)       Saturation (D2)       Saturation (D2)         Begin Water Table (B2)       Oxidized Rinzspheres on Calcued Iron (C4)       Sturtador Orsessed Plants (D1)       Cracks (B6)         Begin Water Stained Cross (B3)       Presence of Reduced Iron (C4)       Sturtated orstressed Plan											
□ Depleted Beiow Dark Surface (A11)       ▲ Redox Dark Surface (F6)         □ Sandy Mucky Mineral (S1)       □ Depleted Dark Surface (F7)         3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):			))								
Sandy Mucky Mineral (S1)       Redox Depressions (F8)       wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):											
Restrictive Layer (if observed):         Type:			• •		lox Dep	ressions	(F8)				present, unless
Type:	5	cm Mucky Peat or	Peat (S	53)					disturbed or pr	oblematic.	
Depth (inches):       Hydric Soil Present?       Yes       X       No         Remarks:    HYDROLOGY          Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply)          Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydroge Sulface Color (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Uving Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C1)       Guego or Well Data (D9)         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)       FleId Observations:         Surface Water Present?       Yes       No       X         Water Table Present?       Yes       No       X         Mater Able Present?       Yes       No       X         Mater Table Present?       Yes       No       X         Mater Table Present?       Yes       No       X         Mater Table Present?       Yes       No       X	Restricti	ve Layer (if obse	rved):								
Remarks:	Type:										
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Inon Deposits (B5)       Thin Muck Surface (C7)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in         Mater Table Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X	Depth (ind	ches):			_	1	Hydric So	oil Present?	Yes	X No	)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Algal Mat or Crust (B4)       Recent Iron Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Inondation Visible on Aerial Imagery (B7)       Gauge or Well Data (D9)       X         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       No       X         Surface water Present?       Yes       No       X         Saturation Present?       Yes       No       X         Depth:       in       in       in         Saturation Present?       Yes       No       X         Depth:       in       in       Metland Hydrology Present       Yes       No       X         <	Remarks:										
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Algal Mat or Crust (B4)       Recent Iron Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Inondation Visible on Aerial Imagery (B7)       Gauge or Well Data (D9)       X         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       No       X         Surface water Present?       Yes       No       X         Saturation Present?       Yes       No       X         Depth:       in       in       in         Saturation Present?       Yes       No       X         Depth:       in       in       Metland Hydrology Present       Yes       No       X         <											
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Algal Mat or Crust (B4)       Recent Iron Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Inondation Visible on Aerial Imagery (B7)       Gauge or Well Data (D9)       X         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       No       X         Surface water Present?       Yes       No       X         Saturation Present?       Yes       No       X         Depth:       in       in       in         Saturation Present?       Yes       No       X         Depth:       in       in       Metland Hydrology Present       Yes       No       X         <											
Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of 2 required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soii Cracks (B6)         High Water Table (A2)       Aquatic Plants (B13)       Drainage Patterns (B10)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       X       FAC-Neutral Test (D5)         Surface Water Present?       Yes       No       X       Depth:       in         Water Table Present?       Yes       No       X       Depth:       in         Mater Table Present?       Yes       No       X       Depth:       in         Includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       No       X         Prepared by:       KRG	HYDRO	LOGY									
Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Craffish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       Surface Water Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in       Metland Hydrology Present       Yes       No       X         Other (Explain in Remarks)       Includes capillary fringe)       No       X       Depth:       in       No       X         Describe Recorded D											
High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       Surface Water Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in       Metland Hydrology Present       Yes       No       X         Icincludes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Prepared by:       KRG				is required; check a	all that a	apply)		Se	condary Indicat	tors (minimu	m of 2 required)
Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       Surface Water Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in       Wetland Hydrology Present       Yes       No       X         Incides capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Prepared by:       KRG	S	Surface Water (A1)		Wat	er-Stai	ned Leav	ves (B9)				
Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       Surface Water Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in       Wetland Hydrology Present       Yes       No       X         Incides capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Prepared by:       KRG	F	ligh Water Table (A	42)	Aqu	atic Fa	una (B13	3)		Drainage Pat	terns (B10)	
Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       FAC-Neutral Test (D5)         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       Surface Water Present?       Yes       No       X         Sutration Present?       Yes       No       X       Depth:       in         Mater Table Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in         Generation Present?       Yes       No       X       Depth:       in         Includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Prepared by:       KRG	s	Saturation (A3)	-	True	e Aquat	ic Plants	(B14)		Dry-Season \	Nater Table	(C2)
Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       FAC-Neutral Test (D5)         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       Surface Water Present?       Yes       No         Sutration Present?       Yes       No       X       Depth:       in         Mater Table Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in         Includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Prepared by:       KRG	v	Vater Marks (B1)		Hyd	rogen S	Sulfide O	dor (C1)		Crayfish Burr	ows (C8)	. ,
Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       Other (Explain in Remarks)       Other (Explain in Remarks)       Investing the present?       Yes       No       X         Surface Water Present?       Yes       No       X       Depth:       in       Investing the present?       No       X         Gauge or Well Data (D9)       Other (Explain in Remarks)       Investing the present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in       Wetland Hydrology Present       Yes       No       X         Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Prepared by:       KRG			(B2)					oots (C3)			al Imagery (C9)
Algal Mat or Crust (B4)       Recent Iron Reduction on Tilled Soil (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       X       FAC-Neutral Test (D5)         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)       Methand Remarks       Feild Observations:         Surface Water Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in         Gincludes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Remarks:			· · ·	Pre	sence c	of Reduce	ed Iron (C	4)			
Iron Deposits (B5)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)       Other (Explain in Remarks)         Field Observations:       Other (Explain in Remarks)         Surface Water Present?       Yes       No       X       Depth:       in         Water Table Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in         Gauge capellary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Remarks:			B4)								. ,
Inundation Visible on Aerial Imagery(B7)       Gauge or Well Data (D9)         Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       Surface Water Present? Yes       No       X         Surface Water Present?       Yes       No       X       Depth:       in         Water Table Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in         Gauge or Well Data (D9)       Mo       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in         Uncludes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Remarks:         Remarks:       Prepared by:       KRG			,	Thir	n Muck	Surface (	(C7)	X			,
Sparse Vegetated Concave Surface(B8)       Other (Explain in Remarks)         Field Observations:       Surface Water Present? Yes No X Depth:		• • • •	Aerial Ima				• •		-	( )	
Field Observations:         Surface Water Present?       Yes       No       X       Depth:       in         Water Table Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in         Vincludes capillary fringe)       No       X       Depth:       in         Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Remarks:	s	parse Vegetated Con	ncave Sur								
Surface Water Present?       Yes       No       X       Depth:       in       in         Water Table Present?       Yes       No       X       Depth:       in       in       Wetland Hydrology Present       Yes       No       X         Saturation Present?       Yes       No       X       Depth:       in       in       Wetland Hydrology Present       Yes       No       X         (includes capillary fringe)       No       X       Depth:       in       in       Wetland Hydrology Present       Yes       No       X         Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Remarks:       Prepared by:       KRG				· · ·			,				
Water Table Present?       Yes       No       X       Depth:       in         Saturation Present?       Yes       No       X       Depth:       in         (includes capillary fringe)       No       X       Depth:       in       Wetland Hydrology Present       Yes       No       X         Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       Remarks:       Prepared by:       KRG			Yee		enth		in				
Saturation Present?       Yes       No       X       Depth:       in       Wetland Hydrology Present       Yes       No       X         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:       No       X         Remarks:       Prepared by:       KRG			-				-				
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available: Remarks: Prepared by: KRG			-				-	tland Uvdrol	av Procont	Voe	No Y
Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available: Remarks: Prepared by: KRG			169		epui.				Sa Lieseni	169	
Remarks: Prepared by: KRG			ream do	uge monitoring we	l aeria	Inhotogr	anhs pro	vious inspectio	ons) if available		
Prepared by: KRG	Describe										
Prepared by: KRG	Remarks	Remarks:									
	r tomarito.										

Project/Site:	Replacement Terminal EA	С	ity/County:	Des Moine	es/ Polk Sampling Date: 5/8/18
Applicant/Owner:	Des Moines International Airpo	ort		State:	Iowa Sampling Point: DP-17
Investigator(s):	Katie Goff	ship Range	: S 29-32, T78N, R24W		
Landform (hillslope,	terrace, etc.): Low-lying area	L	ocal Relief (d	concave, cor	nvex, none): Concave
Slope (%): 9-14	Lat: 41.5247517	L	ong: -93.6	65479	Datum: Wetland 8
Soil Map Unit Name	: 370D2 - Sharpsburg silty cla	y loam, ero	ded	NW	/I Classification: None
	conditions on the site typical for this			wetter than n	normal (see Section 2.6)
Are vegetation	soil or hydrology	significantly	/ disturbed?	Are "Norma	al Circumstances" present? Y X N
Are vegetation	soil or hydrology	significantly	/ problematic	? (if neede	ed, explain any answers in Remarks)
SUMMARY OF FI	NDINGS – Attach site map s	howing san	npling point	locations,	transects, important features, etc.
Hydrophytic Vegetat Hydric Soil Present?	Yes X	No		Sampled Ar a Wetland?	
Wetland Hydrology	Present? Yes X	No	_	a wedana :	
Remarks:					
VEGETATION - U	Jse scientific names of plants				
Tree Stratum >3" DB	H (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
	af Maple (Acer negundo)	20	Y	FAC	Number of Dominant Species that 3
	ood (Populus deltoids)	40	Y	FAC	are OBL, FACW, or FAC (A):
3 4					Total Number of Dominant Species 3 Across All Strata (B):
5					Percent of Dominant Species That
	20% Total Cover 12	60	= Total Cov	ver	are OBL, FACW, or FAC (A/B):
Sapling/Shrub Stratur	$\underline{m}$ <3" DBH or > 1 m tall (Plot s	size: 15' radi	us)		Prevalence Index Worksheet:
1					Total % Cover of: Multiply by:
2					OBL species X 1
3					FACW species X 2
<u>4</u> 5					FAC species X 3
5	20% Total Cover		- Tatal Car		FACU species X 4 UPL species X 5
			= Total Cov	/er	Totals (A) (B)
Herb Stratum non-wo	ody or woody < 1 m tall (Plot s	size: 5' radiu	s)		Prevalence Index = B/A =
1 Reed Canary Gra	ss (Phalaris arundinacea)	100	Y	FACW	Hydrophytic Vegetation Indicators:
2		100		171011	1-Rapid Test for Hydrophytic Veg
3					X 2-Dominance Test is > 50%
4					3-Prevalence Index is ≤3.0 <sup>1</sup>
5					4-Morphological Adaptations
6					(Provide supporting data in Remarks)
7 8					Problematic Hydrophytic
9					Vegetation <sup>1</sup> (Explain)
10					<sup>1</sup> Indicators of hydric soil and wetland
11					hydrology must be present, unless
50% Total Cover	20% Total Cover20	100	= Total Cov	ver	disturbed or problematic.
Woody Vine Stratum	> 1 m tall (Plot size: 30	' radius)	1		
2					Hydrophytic Vegetation Yes X No
3					Present?
	20% Total Cover		= Total Cov	ver	
Remarks: Vegetat	ion passes the FAC-Neutral test.		1		

SOIL								Sampling Point: DP-17		
Profile Description: (Describe to the depth needed to document the indicator to confirm the absence of indicators.)										
Depth	Remarks									
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture			
0-3	10YR3/1	100					Clay loam			
3-22	10YR3/1	80	10YR4/6	20	С	М	Clay loam			
		epletion,	RM=Reduced Matrix	k, CS=0	covered o	or Coated S		2 Location: PL=Pore Lining, M=Matrix		
Hydric Soil Indicators: Histosol (A1) Sandy Gleved Matrix (S4) Indicator for Problematic Hydric Soils <sup>3</sup> :										
Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16)										
Histic Epipedon (A2) Sandy Redox (S5) Iron-Manganese Masses (F12)										
Black Histic (A3)       Stripped Matrix (S6)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)       Other (Explain in Remarks)										
	Stratified Layers (A5				yed Matr					
	cm Muck (A10)	)			latrix (F3					
	Depleted Below Dar	k Surfa								
	hick Dark Surface				ark Surfa			<sup>3</sup> Indicators of hydrophytic vegetation and		
	Sandy Mucky Miner				ressions			wetland hydrology must be present, unless		
	cm Mucky Peat or			·		<b>、</b>		disturbed or problematic.		
Restricti	ve Layer (if obse	rved):								
Type:		,								
Depth (in	ches):			_		Hydric So	oil Present?	Yes <u>X</u> No		
Remarks:										
HYDRO										
	Hydrology Indica	atore								
			is required; check a	ll that a	annly)		Se	condary Indicators (minimum of 2 required)		
	Surface Water (A1)				hed Leav	(R9)	<u></u>	Surface Soil Cracks (B6)		
	High Water Table (A	(2)			una (B13			Drainage Patterns (B10)		
	Saturation (A3)				ic Plants			Dry-Season Water Table (C2)		
	Vater Marks (B1)					dor (C1)		Crayfish Burrows (C8)		
	Sediment Deposits	(B2)				on Living Ro	ots (C3)	Saturation Visible on Aerial Imagery (C9)		
	Drift Deposits (B3)	<b>`</b>			-	ed Iron (C4	· · · · · · · · · · · · · · · · · · ·	Stunted or Stressed Plants (D1)		
	Algal Mat or Crust (I	34)				n on Tilled S				
	ron Deposits (B5)	,	Thir	Muck	Surface	(C7)	X	FAC-Neutral Test (D5)		
	nundation Visible on A	erial Ima			Vell Data			-		
S	Sparse Vegetated Con	icave Sui	face(B8) Othe	er (Exp	ain in Re	emarks)				
Field Observations:										
Surface Water Present? Yes No X Depth: in										
	ble Present?	Yes		epth:		in				
	n Present?	Yes	No _X _D	epth:		in We	tland Hydrolo	ogy Present Yes <u>X</u> No		
`	(includes capillary fringe)									
Describe	Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:									
Remarks: Two or more secondary wetland indicators were observed; therefore wetland hydrology is present.										
Remarks:	I wo or more se	econdar	y wetland indicators	were o	observed	i; therefore	e wetland hydro	ology is present.		
Prepared by: KRG										
								Checked by: ESM		

Project/Site:	Replacement Terminal EA		ity/County:	Des Moine	
Applicant/Owner:	Des Moines International Airpo	ort		State:	Iowa Sampling Point: DP-18
Investigator(s):	Katie Goff	ship Range	: <u>S 29-32, T78N, R24W</u>		
Landform (hillslope,	terrace, etc.): Low-lying area	L	ocal Relief (o	concave, cor	nvex, none): None
Slope (%): 5-9	Lat: 41.524794	L	ong: -93.6	65345	Datum: Upland
Soil Map Unit Name	: 76C2 - Ladoga silty clay loar	m, dissected	d till plain, er	oded NW	/I Classification: None
-	conditions on the site typical for this		-		normal (see Section 2.6)
Are vegetation	soil or hydrology	-	y disturbed?		al Circumstances" present? Y X N
Are vegetation	soil or hydrology	-	y problematic		ed, explain any answers in Remarks)
			npling point	locations,	transects, important features, etc.
Hydrophytic Vegetat		No	_ Is the !	Sampled Ar	
Hydric Soil Present? Wetland Hydrology I		No <u> </u>		a Wetland?	
			_		
Remarks:					
VEGETATION - U	Jse scientific names of plants				
Tree Stratum >3" DBI	H (Plot size: 30' radius)	Absolute	Dominant	Indicator	Dominance Test Worksheet:
	· · · ·	% Cover	Species?	Status	Dominance rest worksheet.
	ood (Populus deltoids)	20	Y	FAC	Number of Dominant Species that 3
	nus pennsylvanica)	30	Y	FACW	are OBL, FACW, or FAC (A):
3					Total Number of Dominant Species 3 Across All Strata (B):
4 5					Percent of Dominant Species That
5	20% Total Cover		= Total Cov	ior	are OBL, FACW, or FAC (A/B):
				ei	
Sapling/Shrub Stratur	$\underline{m}$ <3" DBH or > 1 m tall (Plot :	size: 15' rad	ius)		Prevalence Index Worksheet:
1					Total % Cover of: Multiply by:
2					OBL species X 1
3					FACW species X 2
4			-		FAC species X 3
5					FACU species X 4
	20% Total Cover		= Total Cov	rer	UPL species X 5
Herb Stratum non-wo	ody or woody < 1 m tall (Plot s	size: 5' radiu	is)		Totals (A) (B)
				EA 0)4/	Prevalence Index = B/A =
	ss (Phalaris arundinacea)	90	Y	FACW	Hydrophytic Vegetation Indicators:
hederacea)	(Ground Ivy) (Glechoma	10	N	FACU	1-Rapid Test for Hydrophytic Veg
3					X 2-Dominance Test is > 50%
4					$_{}$ 3-Prevalence Index is ≤3.0 <sup>1</sup>
5 6					4-Morphological Adaptations
7					(Provide supporting data in Remarks)
8					Problematic Hydrophytic
9					Vegetation <sup>1</sup> (Explain)
10					<sup>1</sup> Indicators of hydric soil and wetland
11					hydrology must be present, unless
50% Total Cover	20% Total Cover		= Total Cov	ver	disturbed or problematic.
Woody Vine Stratum	> 1 m tall (Plot size: 30	)' radius)			
1					Hydrophytic
2					Vegetation Yes <u>X</u> No
3					Present?
	20% Total Cover		= Total Cov	ver	
Remarks: Vegetati	ion passes the FAC-Neutral test.				

SOIL Sampling Point: DP-18										
Profile Description: (Describe to the depth needed to document the indicator to confirm the absence of indicators.)										
Depth Matrix				Red	ox Featur	res		Remarks		
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		rtoman	
0-5	10YR3/1	100					Silty Clay			
							Loam			
5-20	10YR3/1	90	10YR4/6	10	С	М	Silty Clay Loam			
							Loam			
<sup>1</sup> Type <sup>.</sup> C=	Concentration D=D	epletion	RM=Reduced Matri	x CS=0	L Covered o	or Coated	Sand Grains	2 Location: P	I =Pore Linin	n M=Matrix
	oil Indicators:	<u>op:ouon</u> ,		.,						ic Hydric Soils <sup>3</sup> :
	listosol (A1)		Sar	dy Glev	yed Matri	x (S4)			irie Redox (A	
	listic Epipedon (A2	)			lox (S5)	( )	-		ganese Mass	
	Black Histic (A3)				atrix (S6)		-	Other (Ex	plain in Rem	arks)
	lydrogen Sulfide (A				cky Miner					
	Stratified Layers (As	5)			yed Matri					
	cm Muck (A10)				Atrix (F3					
	Depleted Below Dar Thick Dark Surface				k Surface ark Surfa			3 Indiantara of	budrophytic	vocatation and
	Sandy Mucky Miner				ressions			wetland hydro	loav must be	vegetation and present, unless
	cm Mucky Peat or				100010110	(10)		disturbed or p	roblematic.	
	ve Layer (if obse	•						•		
Type:		i vouj.								
Depth (in	ches):					Hvdric S	Soil Present?	Yes	X N	0
	·					,				
Remarks:										
HYDRO	LOGY									
	Hydrology Indic		te an an terrationale estate				0.			
	<u>ndicators (minimum</u> Surface Water (A1)	n of one	is required; check a	all that a	<u>apply)</u> ned Leav	(DO)	<u>Se</u>	Surface Soil		m of 2 required)
	ligh Water Table (A	121			una (B13			Drainage Pa		
	Saturation (A3)	~~)								
	Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)								(02)	
	Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)									ial Imagery (C9)
	Drift Deposits (B3)	. ,	Pre	sence c	of Reduce	ed Iron (O	C4)		stressed Plar	
A	Algal Mat or Crust (B4)     Recent Iron Reduction on Tilled Soil (C6)     Geomorphic Position (D2)									2)
	Iron Deposits (B5) Thin Muck Surface (C7) X FAC-Neutral Test (D5)									
	nundation Visible on A		<u> </u>		Vell Data					
Sparse Vegetated Concave Surface(B8) Other (Explain in Remarks)										
	servations:									
	Vater Present?	Yes		epth:		in				
	ble Present?	Yes		epth:		in		<b>_</b> .	M	N
	n Present?	Yes	No <u>X</u> D	epth:		in <b>W</b>	etland Hydrol	ogy Present	Yes	NoX
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:										
שניטרושט הכנטיוענע שעוע נטויבמווו צמעצב, וווטווונטוווא איפוו, מבוזמו אווטנטצומאווס, אובאוטעט וווסאבנוטווס), וו מימוומטוב.										
Remarks:										
									•	ared by: KRG
									Cheo	cked by: ESM

Project/Site:	Project/Site: Replacement Terminal EA					es/ Polk	Sampling Date:	5/8/1	8
Applicant/Owner:						lowa	Sampling Point:	DP-1	9
Investigator(s):	Katie Goff		Section	on, Towr	ship Range:	S 29-32,	T78N, R24W		
Landform (hillslope,	terrace, etc.): Drainageway	Local Relief (concave, convex, none): Convex							
Slope (%): 9-14	Lat: 41.523182		Long		61973	Datum:	Upland		
	: 76C2 Ladoga silty clay loar	m. eroded	5			I Classificat			
	conditions on the site typical for th		ar?	Νον	vetter than n				
Are vegetation	soil or hydrology	significar		-		I Circumstand		ΥX	N
Are vegetation	soil or hydrology	significar	-				ly answers in Ren		
		_ 0			,	-	-		
SUMMARY OF FI	NDINGS – Attach site map	showing s	ampli	ng point	locations,	transects, i	mportant featur	es, etc.	
Hydrophytic Vegetat	tion Present? Yes <u>X</u> Yes X	No							
Hydric Soil Present?	Is the Sampled Area Yes NoX					X			
Wetland Hydrology	Present? Yes	No X	<u> </u>	within	a welland?				
Remarks: Data po	int taken in grassed swale are	а							
VEGETATION - I	Jse scientific names of plant	e							
	se scientific names of plant								
Tree Stratum >3" DB	H (Plot size: 30' radius)	Absolute % Cove		ominant becies?	Indicator Status	Dominance	e Test Workshee	t:	
1		/0 COVE			Sidius	Number of	Dominant Species	s that	
2							ACW, or FAC (A):		1
3							er of Dominant S		
4						Across All S			1
5							Dominant Species		100
	20% Total Cover		= -	Total Cov	ver	are OBL, F	ACW, or FAC (A/I	3):	
Conling/Chruh Stratu	m <2" DDLL or > 1 m toll (Dlo	+ oino, 15' m	dine)			Dravalana	Index Merkehe	<b></b>	
Sapling/Shrub Stratu	$\underline{m}$ <3" DBH or > 1 m tall (Plo	t size: 15' ra	iaius)			Prevalence Index Worksheet:			
1						<u>Total %</u>	Cover of:	Multiply	<u>' by:</u>
2						OBL species			
3						FACW spec			
4 5			_			FAC species			
5	20% Total Cover			Tatal Car		FACU species			
			= Total Cover					B)	
Herb Stratum non-wo	ody or woody < 1 m tall (Plo	t size: 5' rac	lius)				ence Index = B/A	· · · · · · · · · · · · · · · · · · ·	
1 Reed Canary Gra	ss (Phalaris arundinacea)	110		Y	FACW		ic Vegetation Inc		•
2		110			17,000		apid Test for Hydr		
3							ominance Test is		5
4						3-Pi	evalence Index is	≤3.0 <sup>1</sup>	
5							orphological Adap		
6							vide supporting d	ata in	
7			_				narks)		
8 9							olematic Hydrophy etation <sup>1</sup> (Explain)		
10						-	of hydric soil and		4
11							nust be present, u		
50% Total Cover	55 20% Total Cover 22	110	= -	Total Cov	rer		r problematic.		
Woody Vine Stratum > 1 m tall         (Plot size: 30' radius)									
1						Hydrophy		NI -	
2 3						Vegetatio Present?		_ No	
0	20% Total Cover			Total Car	lor				
Domarka: Vagatat	ion passes the FAC-Neutral test	-	=	Total Cov					
Remarks: Vegetat	ion passes me rac-neutidi lest								

SOIL Sampling Point: DP-19										
Profile Description: (Describe to the depth needed to document the indicator to confirm the absence of indicators.)										
Depth				ox Featu			Remarks			
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture			
0-20	10YR3/1	90	10YR4/6	10	С	М	Silty Clay Loam			
							LUaiii			
<sup>1</sup> Type: C=	Concentration D=D	epletion	RM=Reduced Matri	x CS=C	Covered c	or Coated S	and Grains	2 Location: PL=Pore Lining, M=Matrix		
	oil Indicators:	001001011,		, 00° C				Indicator for Problematic Hydric Soils <sup>3</sup> :		
⊦	listosol (A1)		San	dy Gley	ed Matri	ix (S4)		Coast Prairie Redox (A16)		
	listic Epipedon (A2	)			ox (S5)			Iron-Manganese Masses (F12)		
	Black Histic (A3)				atrix (S6			Other (Explain in Remarks)		
	lydrogen Sulfide (A				ky Mine					
	Stratified Layers (As cm Muck (A10)	)			yed Matr latrix (F3					
	epleted Below Dar	k Surfa								
	hick Dark Surface					ace (F7)		<sup>3</sup> Indicators of hydrophytic vegetation and		
	andy Mucky Miner				ressions	· · ·		wetland hydrology must be present, unless		
5	cm Mucky Peat or	Peat (S	53)					disturbed or problematic.		
Restricti	ve Layer (if obse	rved):								
Type:	-									
Depth (ind	ches):					Hydric So	oil Present?	Yes <u>X</u> No		
Remarks:										
HYDRO										
	Hydrology Indica		·				0			
	Surface Water (A1)	of one	is required; check a	all that a	apply) hed Leav	(DO)	<u>Se</u>	econdary Indicators (minimum of 2 required) Surface Soil Cracks (B6)		
	ligh Water Table (A	2)						Drainage Patterns (B10)		
								Dry-Season Water Table (C2)		
								Crayfish Burrows (C8)		
	Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)									
	Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1)									
	Algal Mat or Crust (B4) Recent Iron Reduction on Tilled Soil (C6) Geomorphic Position (D2)									
	Iron Deposits (B5) Thin Muck Surface (C7) X FAC-Neutral Test (D5)									
	Inundation Visible on Aerial Imagery(B7) Gauge or Well Data (D9)									
Sparse Vegetated Concave Surface(B8) Other (Explain in Remarks)										
	servations:	Vee		onth		in				
	Vater Present?	Yes Yes		epth:		_ in in				
Water Table Present?       Yes       No       X       Depth:       in       Metland Hydrology Present       Yes       No       X         Saturation Present?       Yes       No       X       Depth:       in       Wetland Hydrology Present       Yes       No       X										
(includes capillary fringe)										
Describe Recorded Data (stream gauge, monitoring well, aerial photographs, previous inspections), if available:										
Remarks:										
								Prepared by: KRG		
								Checked by: <u>ESM</u>		

Project/Site:	Replacement Terminal EA	(	City/County:	Des Moine	es/ Polk S	Sampling Date:	5/8/18
Applicant/Owner:	Des Moines International Airpo	ort		State:	lowa S	Sampling Point:	DP-20
Investigator(s):	Katie Goff		Section, Towr	ship Range	: S 29-32, T	78N, R24W	
Landform (hillslope,	terrace, etc.): Low-lying area				vex, none):		
Slope (%): 0-5	Lat: 41.5226		-	673807	Datum:	Wetland 9	
	: 11B - Colo-Judson silty clay		·	ded NW	/I Classificatio	n: None	
	conditions on the site typical for thi				ormal (see Se		
Are vegetation	soil or hydrology	-	ly disturbed?		I Circumstance		(XN
Are vegetation	soil or hydrology		ly problematic			answers in Rem	
		-					
	NDINGS – Attach site map s	nowing sa	mpling point	locations,	transects, im	portant feature	etc.
Hydrophytic Vegetat		No		Compled Ar	••		
Hydric Soil Present?		No		Sampled Ar a Wetland?		<u> </u>	No
Wetland Hydrology	Present? Yes X	No	_				
Remarks: Data po	int taken near fence line and cu	ılvert.					
VEGETATION - U	Jse scientific names of plants						
Tree Stratum >3" DBI	H (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance	Test Worksheet	
1		70 00001	Opecies	Olalus	Number of D	ominant Species	that -
2						CW, or FAC (A):	2
3						r of Dominant Sp	becies 2
4					Across All St		
5						ominant Species	
	20% Total Cover	_	= Total Cov	ver	are OBL, FAG	CW, or FAC (A/B	·):
Sapling/Shrub Stratur	$\underline{m}$ <3" DBH or > 1 m tall (Plot	size: 15' rad	dius)		Prevalence I	Index Workshee	∗t:
1					<u>Total % C</u>	over of:	Multiply by:
2					OBL species	X	1
3					FACW specie		
4 5					FAC species	X:	
5	20% Total Cover		- Tatal Car		FACU species	s X 4	
		-	= Total Cov	er .	Totals (A	·	
Herb Stratum non-wo	oody or woody < 1 m tall (Plot	size: 5' radi	us)			ice Index = B/A	
1 Reed Canary Gra	ss (Phalaris arundinacea)	60	Y	FACW		Vegetation Ind	
2 Cattail species (7)		30	Y	OBL		oid Test for Hydro	
	Rush (Eleocharis palustris)	10	N	OBL		ninance Test is >	
4					3-Pre	valence Index is	≤3.0 <sup>1</sup>
5						rphological Adap	
6						ide supporting da	ata in
7 8					Rema		tio
9						ematic Hydrophy tation <sup>1</sup> (Explain)	
10					-	of hydric soil and	
11						ust be present, u	
50% Total Cover	50 20% Total Cover 20	100	= Total Cov	ver	disturbed or	problematic.	
Woody Vine Stratum	> 1 m tall (Plot size: 30	0' radius)					
1		ļ	-		Hydrophytic		N
2 3					Vegetation Present?	Yes X	No
J	20% Total Cover	+	- Tatal Ori		1 (536))(		
Domorkov Verstel		1	= Total Cov	ver			
Remarks: Vegetat	ion passes the FAC-Neutral test.						

SOIL								Sampling Point: DP-20		
		cribe to	the depth neede				cator to co	nfirm the absence of indicators.)		
Profile Description: (Describe to the depth needed to document the indicator to confirm the absence of indicators         Depth (inches)       Matrix       Redox Features       Remarks         Color (moist)       %       Color (Moist)       %       Type <sup>1</sup> Loc <sup>2</sup> Texture								Remarks		
(inches)	Color (moist)	%	Color (Moist)	%	Туре	Loc <sup>2</sup>				
0-24	10YR3/1	85	10YR4/6	15	С	М	Silty clay loam	Some pebbles, Iron and manganese nodules		
							ioani	Tioudies		
						-				
1										
	Concentration, D=De	epletion,	RM=Reduced Matr	x, CS=C	Covered	or Coated S	Sand Grains.	2 Location: PL=Pore Lining, M=Matrix		
	oil Indicators: listosol (A1)		Sor		od Mat	riv(Q4)		Indicator for Problematic Hydric Soils <sup>3</sup> : Coast Prairie Redox (A16)		
	listic Epipedon (A2	)			/ed Matı ox (S5)	11X (04)		Iron-Manganese Masses ( F12)		
	Black Histic (A3)	)			atrix (S6	3)		Other (Explain in Remarks)		
	lydrogen Sulfide (A	4)				eral (F1)				
	Stratified Layers (A5				yed Mat					
	cm Muck (A10)				latrix (F3					
	Depleted Below Dar									
	hick Dark Surface					face (F7)		<sup>3</sup> Indicators of hydrophytic vegetation and		
	Sandy Mucky Miner	• •		lox Dep	ressions	s (F8)		wetland hydrology must be present, unless disturbed or problematic.		
	cm Mucky Peat or	•	3)					disturbed of problematic.		
	ve Layer (if obse	rved):								
Type: Depth (ind						Uvdric Sc	oil Present?	Yes X No		
	-					Hyunc St	JII Flesent:			
Remarks:										
HYDRO										
	Hydrology Indica						-			
	ndicators (minimum Surface Water (A1)	of one	Is required; check a	all that a	appiy)	ves (B9)	<u>S</u>	econdary Indicators (minimum of 2 required) Surface Soil Cracks (B6)		
	ligh Water Table (A	2)			una (B1		X	Drainage Patterns (B10)		
	Saturation (A3)	~~)			ic Plants			Dry-Season Water Table (C2)		
	Vater Marks (B1)					Ddor (C1)		Crayfish Burrows (C8)		
	Sediment Deposits (	(B2)				s on Living Ro	oots (C3)	Saturation Visible on Aerial Imagery (C9)		
	Drift Deposits (B3)	. ,	Pre	sence o	f Reduc	ed Iron (C4	4)	Stunted or Stressed Plants (D1)		
	Igal Mat or Crust (	34)				n on Tilled S	oil (C6) X			
	on Deposits (B5)				Surface		X	FAC-Neutral Test (D5)		
	nundation Visible on A			-	Vell Data	• •				
	parse Vegetated Con	icave Sur		er (Exp	iain in R	emarks)				
	servations:									
	Vater Present?	Yes _		epth:	1	_ in				
	ble Present? Present?	Yes _		epth:	0	_ in _ wo	tland Uvdra	logy Procent Voc V No		
	capillary fringe)	Yes	<u>X</u> No E	epth:	0	_ in   We	and nyuro	logy Present Yes X No		
	Recorded Data (str	eam da	uge, monitoring we	II. aerial	photog	raphs, prev	vious inspect	ions), if available:		
		30		,		,, p. o.				
Remarks:										
								Prepared by: KRG		
								Checked by: ESM		

Project/Site:	Replacement Terminal EA	City/County:	Des Moines/ Polk		Sampling Date:	5/8/18
Applicant/Owner:	Des Moines International Airport	_	State:	lowa	Sampling Point:	DP-21
Investigator(s):	Katie Goff	Section, Towns	ship Range:	S 29-32,	T78N, R24W	
Landform (hillslope,	terrace, etc.): Hillslope	Local Relief (co	oncave, con	vex, none):	Convex	
Slope (%): 0-5	Lat: 41.522857	Long: -93.67	73604	Datum:	Upland	
Soil Map Unit Name	: 11B - Colo-Judson silty clay loams, or	ccasionally flood	led NW	Classificat	ion: None	
Are climatic/hydrologic	conditions on the site typical for this time of ye	ear? No, w	etter than no	ormal (see	Section 2.6)	
Are vegetation	soil or hydrology significar	ntly disturbed?	Are "Normal	Circumstand	ces" present? Y	XN
Are vegetation	soil or hydrology significar	ntly problematic?	(if needeo	d, explain ar	ny answers in Rem	arks)

#### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	X X	No No No	X	Is the Sampled Area within a Wetland?	Yes	No _	X
Remarks:								

#### **VEGETATION –** Use scientific names of plants.

Tree Stratum >3" DBH (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1				Number of Dominant Species that
2				are OBL, FACW, or FAC (A):
3				Total Number of Dominant Species
4				Across All Strata (B):
5				Percent of Dominant Species That
20% Total Cover	_	= Total Cov	ver	are OBL, FACW, or FAC (A/B):
Sapling/Shrub Stratum <3" DBH or > 1 m tall (Plot	size: 15' radi	us)		Prevalence Index Worksheet:
1				Total % Cover of: Multiply by:
2				OBL species X 1
3				FACW species X 2
4				FAC species X 3
5				FACU species X 4
20% Total Cover		= Total Cov	rer	UPL species X 5
				Totals (A) (B)
Herb Stratum non-woody or woody < 1 m tall (Plot	size: 5' radiu	s)		Prevalence Index = B/A =
	00		E1 0) 1/	Llevelue when the Manustations he dispatence.
1 Reed Canary Grass ( <i>Phalaris arundinacea</i> )	90	Y	FACW	Hydrophytic Vegetation Indicators:
<ol> <li>Reed Canary Grass (<i>Phalaris arundinacea</i>)</li> <li>Wild Parsnip (<i>Pastinaca sativa</i>)</li> </ol>	90 10	Y N	FACW NL	1-Rapid Test for Hydrophytic Veg
		-	_	
2 Wild Parsnip (Pastinaca sativa)	10	N	NL	1-Rapid Test for Hydrophytic Veg
<ul> <li>2 Wild Parsnip (<i>Pastinaca sativa</i>)</li> <li>3 Common Dandelion (<i>Taraxacum officinale</i>)</li> <li>4</li> <li>5</li> </ul>	10	N	NL	1-Rapid Test for Hydrophytic Veg         2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations
<ul> <li>2 Wild Parsnip (<i>Pastinaca sativa</i>)</li> <li>3 Common Dandelion (<i>Taraxacum officinale</i>)</li> <li>4</li> <li>5</li> <li>6</li> </ul>	10	N	NL	1-Rapid Test for Hydrophytic Veg         2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations         (Provide supporting data in
<ul> <li>2 Wild Parsnip (<i>Pastinaca sativa</i>)</li> <li>3 Common Dandelion (<i>Taraxacum officinale</i>)</li> <li>4</li> <li>5</li> </ul>	10	N	NL	1-Rapid Test for Hydrophytic Veg         2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations
<ul> <li>2 Wild Parsnip (<i>Pastinaca sativa</i>)</li> <li>3 Common Dandelion (<i>Taraxacum officinale</i>)</li> <li>4</li> <li>5</li> <li>6</li> <li>7</li> <li>8</li> </ul>	10	N	NL	1-Rapid Test for Hydrophytic Veg         2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations         (Provide supporting data in Remarks)         Problematic Hydrophytic
<ul> <li>2 Wild Parsnip (<i>Pastinaca sativa</i>)</li> <li>3 Common Dandelion (<i>Taraxacum officinale</i>)</li> <li>4</li> <li>5</li> <li>6</li> <li>7</li> <li>8</li> <li>9</li> </ul>	10	N	NL	1-Rapid Test for Hydrophytic Veg         2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations (Provide supporting data in Remarks)
<ul> <li>2 Wild Parsnip (<i>Pastinaca sativa</i>)</li> <li>3 Common Dandelion (<i>Taraxacum officinale</i>)</li> <li>4</li> <li>5</li> <li>6</li> <li>7</li> <li>8</li> <li>9</li> <li>10</li> </ul>	10	N	NL	1-Rapid Test for Hydrophytic Veg         2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)         1 Indicators of hydric soil and wetland
<ul> <li>2 Wild Parsnip (<i>Pastinaca sativa</i>)</li> <li>3 Common Dandelion (<i>Taraxacum officinale</i>)</li> <li>4</li> <li>5</li> <li>6</li> <li>7</li> <li>8</li> <li>9</li> <li>10</li> <li>11</li> </ul>	10	N	NL	1-Rapid Test for Hydrophytic Veg         2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)         1 Indicators of hydric soil and wetland hydrology must be present, unless
<ul> <li>2 Wild Parsnip (<i>Pastinaca sativa</i>)</li> <li>3 Common Dandelion (<i>Taraxacum officinale</i>)</li> <li>4</li> <li>5</li> <li>6</li> <li>7</li> <li>8</li> <li>9</li> <li>10</li> </ul>	10	N	NL FACU	1-Rapid Test for Hydrophytic Veg         2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)         1 Indicators of hydric soil and wetland
<ul> <li>2 Wild Parsnip (<i>Pastinaca sativa</i>)</li> <li>3 Common Dandelion (<i>Taraxacum officinale</i>)</li> <li>4</li> <li>5</li> <li>6</li> <li>7</li> <li>8</li> <li>9</li> <li>10</li> <li>11</li> </ul>			NL FACU	1-Rapid Test for Hydrophytic Veg         2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)         1 Indicators of hydric soil and wetland hydrology must be present, unless
2       Wild Parsnip (Pastinaca sativa)         3       Common Dandelion (Taraxacum officinale)         4			NL FACU	1-Rapid Test for Hydrophytic Veg         2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations         (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)         1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2       Wild Parsnip (Pastinaca sativa)         3       Common Dandelion (Taraxacum officinale)         4       5         5       6         7       8         9       10         11       50% Total Cover 20% Total Cover         Woody Vine Stratum > 1 m tall       (Plot size: 3)			NL FACU	1-Rapid Test for Hydrophytic Veg         2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations         (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)         1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.         Hydrophytic Vegetation Yes X No
2       Wild Parsnip (Pastinaca sativa)         3       Common Dandelion (Taraxacum officinale)         4       5         5       6         7       8         9       10         11       50% Total Cover 20% Total Cover         Woody Vine Stratum > 1 m tall       (Plot size: 3)         1       1			NL FACU	1-Rapid Test for Hydrophytic Veg         2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations         (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)         1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.         Hydrophytic
2       Wild Parsnip (Pastinaca sativa)         3       Common Dandelion (Taraxacum officinale)         4       5         5       6         7       8         9       10         11       50% Total Cover 20% Total Cover         Woody Vine Stratum > 1 m tall       (Plot size: 3         1       2			NL FACU	1-Rapid Test for Hydrophytic Veg         2-Dominance Test is > 50%         3-Prevalence Index is ≤3.01         4-Morphological Adaptations         (Provide supporting data in Remarks)         Problematic Hydrophytic Vegetation 1 (Explain)         1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.         Hydrophytic Vegetation Yes X No

SOIL									Sampling I	
		cribe to	the depth neede				dicator to con	firm the abse	nce of indic	ators.)
Depth	Matrix				ox Featur				Remarks	3
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture			-
0-5	10YR4/1	100					Silty Clay Loam	Pebbles		
E 00	10/02/1	05		F	<u> </u>	NA	Silty Clay			
5-22	10YR3/1	95	10YR4/6	5	С	М	Loam			
				-	-					
							_			
		epletion,	RM=Reduced Matri	x, CS=0	Covered o	r Coated	Sand Grains.	2 Location: Pl		
	Soil Indicators:		0							c Hydric Soils <sup>3</sup> :
	Histosol (A1)	•			yed Matri	x (S4)	_		rie Redox (A anese Masse	
	Histic Epipedon (A2 Black Histic (A3)	)			lox (S5) atrix (S6)	\ \	_		plain in Rema	
	Hydrogen Sulfide (A	(4)			cky Miner		_			11(5)
	Stratified Layers (As				yed Matri					
	2 cm Muck (A10)	- /			latrix (F3					
	Depleted Below Dar	rk Surfa								
	hick Dark Surface				ark Surfa			<sup>3</sup> Indicators of	hydrophytic v	regetation and
	Sandy Mucky Miner			lox Dep	oressions	(F8)		wetland hydrol	ogy must be	present, unless
5	5 cm Mucky Peat or	Peat (S	\$3)					disturbed or pr	oblematic.	
	ive Layer (if obse	erved):								
Type:										
Depth (in	ches):				1	Hydric S	Soil Present?	Yes	X No	
Remarks										
HYDRO	LOGY									
Wetland	Hydrology Indic	ators:								
Primary I	ndicators (minimum	n of one	is required; check a	all that a	apply)		Se	condary Indicat	tors (minimur	n of 2 required)
	Surface Water (A1)				ned Leav			Surface Soil		
	High Water Table (A	42)			una (B13			Drainage Pat		
	Saturation (A3)				tic Plants			Dry-Season		(C2)
	Vater Marks (B1)				Sulfide O			Crayfish Bur		(00)
	Sediment Deposits	(BZ)			zospheres of Reduce					al Imagery (C9)
	Drift Deposits (B3) Algal Mat or Crust (I	B4)			Reduction	•	,	Stunted or St Geomorphic		
	ron Deposits (B5)	D7)			Surface (		X	FAC-Neutral		
	nundation Visible on A	Aerial Ima			Vell Data	· /			1001 (20)	
	Sparse Vegetated Cor				lain in Re					
Field Ob	servations:									
	Vater Present?	Yes	No X D	epth:		in				
	ble Present?	Yes		epth:		in				
	n Present?	Yes		epth:		-	etland Hydrolo	ogy Present	Yes	No X
	capillary fringe)			•		-   -				
		ream ga	uge, monitoring we	ll, aeria	l photogr	aphs, pr	evious inspectio	ons), if available	9:	
Demont										
Remarks										
L									Prena	red by: KRG
									•	ked by: ESM

Project/Site:	Replacement Termin	al EA C	City/County:	Des Moines/ Polk		Sampling Date:	5/8/18
Applicant/Owner:	Des Moines International Airport			State:	lowa	Sampling Point:	DP-22
Investigator(s):	Katie Goff	5	Section, Township Range: S 29-32, T78N, R24W				
Landform (hillslope,	terrace, etc.): Man	made basin L	_ocal Relief (c	oncave, con	vex, none):	Concave	
Slope (%): 0-5	Lat: 41.52267	46 L	_ong:93.6	57107	Datum:	Wetland 10	
Soil Map Unit Name	11B - Colo-Judsor	silty clay loams, occ	asionally floo	ded NW	l Classificat	ion: None	
Are climatic/hydrologic	conditions on the site ty	pical for this time of yea	ır? No, w	vetter than n	ormal (see	Section 2.6)	
Are vegetation	soil or hydrold	gy significantl	ly disturbed?	Are "Normal	Circumstand	ces" present? Y	X N
Are vegetation	soil or hydrold	gy significantl	ly problematic?	? (if neede	d, explain ar	ny answers in Rem	arks)

#### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	Х	No					
Hydric Soil Present?	Yes	Х	No	 Is the Sampled Area	Yes	Х	No	
Wetland Hydrology Present?	Yes	Х	No	 within a Wetland?				
Determine television in a s	1		at an la	 	ture and the set the d	0000/0000		

Remarks: Data point taken in a stormwater detention basin that appears to have been constructed in 2008/2009.

#### **VEGETATION –** Use scientific names of plants.

Tree Stratum >3" DBH (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1 Eastern Cottonwood (Populus deltoids)	30	Y	FAC	Number of Dominant Species that
2 Slippery Elm ( <i>Ulmus rubra</i> )	20	Y	FAC	are OBL, FACW, or FAC (A):
3 Sandbar Willow (Salix interior)	10	N	FACW	Total Number of Dominant Species
4				Across All Strata (B):
5				Percent of Dominant Species That
20% Total Cover <u>12</u>	60	= Total Cov	ver	are OBL, FACW, or FAC (A/B):
Sapling/Shrub Stratum <3" DBH or > 1 m tall (Plot s	size: 15' radi	us)		Prevalence Index Worksheet:
1				Total % Cover of: Multiply by:
2				OBL species X 1
3				FACW species X 2
4				FAC species X 3
5				FACU species X 4
20% Total Cover		= Total Cov	rer	UPL species X 5
Herb Stratum non-woody or woody < 1 m tall (Plot s	size: 5' radiu	c)		Totals (A) (B)
				Prevalence Index = B/A =
1 Reed Canary Grass (Phalaris arundinacea)	40	Y	FACW	Hydrophytic Vegetation Indicators:
2 Sedge species ( <i>Carex sp.</i> )	50	Y	assumed FACW	1-Rapid Test for Hydrophytic Veg
3				X 2-Dominance Test is > 50%
4				3-Prevalence Index is ≤3.0 <sup>1</sup>
5				4-Morphological Adaptations
6				(Dravida auroparting data in
7				(Provide supporting data in
				Remarks)
8				Remarks) Problematic Hydrophytic
9				Remarks) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9 10				Remarks) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland
9 10 11				Remarks) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless
9 10	90	= Total Cov	rer	Remarks) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland
9 10 11		= Total Cov	rer	Remarks) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless
9 10 11 50% Total Cover 45 20% Total Cover 18		= Total Cov	rer	Remarks) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless
9           10           11           50% Total Cover         45           20% Total Cover         18           Woody Vine Stratum         1 m tall           (Plot size: 30)		= Total Cov	er	Remarks) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Yes X No
9         10         11         50% Total Cover       45         20% Total Cover       18         Woody Vine Stratum       > 1 m tall       (Plot size: 30)         1       2         3       3		= Total Cov	er	Remarks) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic
9         10         11         50% Total Cover       45         20% Total Cover       18         Woody Vine Stratum       > 1 m tall         1       2		= Total Cov		Remarks) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Yes X No

SOIL								1 0	)P-22
Profile D	escription: (Des	cribe to	the depth neede	d to d	ocumen	nt the indi	cator to con	firm the absence of indicators.)	
Depth	Matrix			Rede	ox Featu	ires		Remarks	
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		
0-2	10YR4/1	100					Muck		
2-22	10YR3/1	90	10YR4/6	10	С	М	Silty Clay		
	101110/1	00	1011(4/0	10	Ŭ		Loam		
1									
<sup>1</sup> Type: C=	Concentration, D=D	epletion,	RM=Reduced Matri	x, CS=0	Covered o	or Coated S	Sand Grains.	2 Location: PL=Pore Lining, M=Matrix Indicator for Problematic Hydric S	
	listosol (A1)		San	dv Glev	yed Matr	tix (S4)		Coast Prairie Redox (A16)	0115
	listic Epipedon (A2	2)			lox (S5)	IX (04)	-	Iron-Manganese Masses ( F12)	
	Black Histic (A3)	,			atrix (S6	5)	-	Other (Explain in Remarks)	
	lydrogen Sulfide (A				cky Mine		-		
	Stratified Layers (A	5)			yed Mati				
	cm Muck (A10)				Aatrix (F3				
	Depleted Below Dar				k Surface			3 ladiantana of budgenebutie up actation a	
	Thick Dark Surface Sandy Mucky Miner				pressions	face (F7)		<sup>3</sup> Indicators of hydrophytic vegetation a wetland hydrology must be present, un	
	5 cm Mucky Peat or				163310113	5 (1 U)		disturbed or problematic.	11033
	ve Layer (if obse	•	- /					·	
Туре:									
Depth (in	ches):					Hydric Se	oil Present?	Yes X No	
Remarks									
HYDRO	LOGY								
Wetland	Hydrology Indic	ators:							
Primary I	ndicators (minimum	n of one	is required; check a				Se	condary Indicators (minimum of 2 requi	ired)
	Surface Water (A1)					ves (B9)		Surface Soil Cracks (B6)	
	ligh Water Table (A	42)			una (B13			Drainage Patterns (B10)	
	Saturation (A3)				tic Plants			Dry-Season Water Table (C2)	
v	Vater Marks (B1) Sediment Deposits	(P2)				on Living Ro		Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (	(CO)
	Drift Deposits (B3)	(62)			•	ed Iron (C		Stunted or Stressed Plants (D1)	(09)
	Algal Mat or Crust (	B4)				n on Tilled S			
	ron Deposits (B5)	,			Surface		<u>X</u>	FAC-Neutral Test (D5)	
	nundation Visible on A	Aerial Ima			Vell Data	· · ·			
5	Sparse Vegetated Cor	ncave Su	face(B8) Oth	er (Exp	lain in Re	emarks)			
Field Ob	servations:								
	Vater Present?	Yes		epth:	3	in			
	ble Present?	Yes		epth:	0	in		<b>_</b>	
	n Present?	Yes	X No D	epth:	0	_ in   We	etland Hydrol	ogy Present Yes <u>X</u> No	
	capillary fringe)	ream aa	uge, monitoring we	ll apria	Inhotog	ranhs pres	vious inenecti	ons) if available:	
Describe	Necoraeu Dala (Sl	icani ya	age, monitoring we	n, aciid	i priotogi	rapits, pre	nous inspecti	01.5, ii avaiiabit.	
Remarks									
l								Prepared by:	KRG
								Checked by: E	ESM

Project/Site:	Replacement Terminal EA	City/County:	Des Moines/ Polk		Sampling Date:	5/8/18
Applicant/Owner:	Des Moines International Airport	_	State:	lowa	Sampling Point:	DP-23
Investigator(s):	Katie Goff	Section, Towns	ship Range:	S 29-32,	T78N, R24W	
Landform (hillslope,	terrace, etc.): Hillslope	Local Relief (co	oncave, con	vex, none):	Convex	
Slope (%): 0-5	Lat: 41.5229251	Long: -93.65	56856	Datum:	Upland	
Soil Map Unit Name	: 11B - Colo-Judson silty clay loams, or	ccasionally flood	ed NW	Classificat	ion: None	
Are climatic/hydrologic	conditions on the site typical for this time of ye	ear? No, we	etter than no	ormal (see	Section 2.6)	
Are vegetation	soil or hydrology significar	ntly disturbed?	Are "Normal	Circumstand	ces" present? Y	XN
Are vegetation	soil or hydrology significar	ntly problematic?	(if neede	d, explain ar	ny answers in Rem	arks)

#### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	X	No No No	X X	Is the Sampled Area within a Wetland?	Yes	No _	X
Remarks:								

rtemarto.

#### **VEGETATION –** Use scientific names of plants.

Tree Stratum >3" DBH (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1 Slippery Elm (Ulmus rubra)	20	Y	FAC	Number of Dominant Species that	
2 Silver Maple (Acer saccharinum)	10	Y	FACW	are OBL, FACW, or FAC (A):	
3				Total Number of Dominant Species	
4				Across All Strata (B): 5	
5				Percent of Dominant Species That 60	
20% Total Cover 6	30	= Total Cov	/er	are OBL, FACW, or FAC (A/B):	
Sapling/Shrub Stratum <3" DBH or > 1 m tall (Plot	size: 15' radi	us)		Prevalence Index Worksheet:	
1				Total % Cover of: Multiply by:	
2				OBL species X 1	
3				FACW species X 2	
4				FAC species X 3	
5				FACU species X 4	
20% Total Cover		= Total Cov	/er	UPL species X 5	
Herb Stratum non-woody or woody < 1 m tall (Plot	size: 5' radiu	1	-	Totals (A) (B)	
		,	-	Prevalence Index = B/A =	
1 Common Dandelion (Taraxacum officinale)	20	Y	FACU	Hydrophytic Vegetation Indicators:	
2 Creeping Charlie (Ground Ivy) ( <i>Glechoma</i> hederacea)	30	Y	FACU	1-Rapid Test for Hydrophytic Veg	
3 English Plantain (Plantago lanceolata)	10	N	FACU	X 2-Dominance Test is > 50%	
4 Field Thistle (Cirsium discolor)	10	N	FACU	3-Prevalence Index is ≤3.0 <sup>1</sup>	
5 Grass species (unknown)	20	Y	assumed FAC	4-Morphological Adaptations ——— (Provide supporting data in	
6				Remarks)	
7				(Cinano)	
8				Problematic Hydrophytic	
9				Vegetation <sup>1</sup> (Explain)	
10				<sup>1</sup> Indicators of hydric soil and wetland	
11				hydrology must be present, unless	
50% Total Cover <u>45</u> 20% Total Cover <u>18</u>	90	= Total Cov	/er	disturbed or problematic.	
<u>Woody Vine Stratum</u> > 1 m tall (Plot size: 30	)' radius)				
1				Hydrophytic	
2				Vegetation Yes <u>X</u> No	
3				Present?	
20% Total Cover		= Total Cov	/er		
Remarks: Vegetation fails the FAC-Neutral test.					

SOIL								S	ampling Point: DP-	-23
Profile Description: (Describe to the depth needed to document the indicator to confirm the absence of indicators.)										
Depth	Matrix			Redo	x Featu				Remarks	
(inches)	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture			
0-6	10YR4/1	100					Silty Clay Loam			
							Silty Clay			
6-22	10YR4/4	100					Loam	Some Pebbles		
		epletion,	RM=Reduced Matri	x, CS=C	overed c	or Coated S			ore Lining, M=Matrix	
	oil Indicators:								oblematic Hydric Soi	ils³:
	listosol (A1)			idy Gley		ix (S4)	—	Coast Prairie		
	listic Epipedon (A2	)		dy Redo		<b>、</b>	—		ese Masses (F12)	
	Black Histic (A3)	4		pped Ma			—	Other (Explain	i in Remarks)	
	lydrogen Sulfide (A Stratified Layers (As			my Muc my Gley						
	cm Muck (A10)	)		oleted Ma						
	Depleted Below Dar	k Surfa		lox Dark						
	hick Dark Surface					ace (F7)		<sup>3</sup> Indicators of hyd	lrophytic vegetation and	h
	Sandy Mucky Miner	· /		lox Depr					must be present, unles	
	cm Mucky Peat or	• •		F				disturbed or proble	ematic.	
Restricti	ve Layer (if obse	rved):	-							
Type:		,								
Depth (in	ches):			_		Hydric So	oil Present?	Yes	<u>No X</u>	
Remarks:										
HYDRO	LOGY									
Wetland	Hydrology Indic	ators:								
			is required; check a	all that a	pply)		Sec	condary Indicators	(minimum of 2 required	d)
	Surface Water (A1)					ves (B9)		Surface Soil Cra		-
F	ligh Water Table (A	A2)		iatic Fau				Drainage Patteri		
S	Saturation (A3)			e Aquati				Dry-Season Wat		
	Vater Marks (B1)					dor (C1)		Crayfish Burrow		
	ediment Deposits	(B2)			•	on Living Ro	· · ·		e on Aerial Imagery (CS	9)
	Prift Deposits (B3)					ed Iron (C4		Stunted or Stres		
	Igal Mat or Crust (I	B4)				n on Tilled S		Geomorphic Pos		
	on Deposits (B5) nundation Visible on A	orial Ima		n Muck S		· · ·		FAC-Neutral Tes	st (D5)	
	parse Vegetated Cor		<u> </u>	ige or W er (Expl		emarks)				
	servations: Vater Present?	Yes	No X E	epth:		in				
	ble Present?	Yes		epth:		- in				
	Present?	Yes		epth:		_	tland Hydrolo	av Present V	es No X	
	capillary fringe)			-pui						-
		ream ga	uge, monitoring we	ll, aerial	photog	raphs, prev	vious inspectio	ons), if available:		
					_					
Remarks:										
remarks.										
L									Prepared by: KR	G
									Checked by: ES	

# Appendix C

# **Ground Photographs**



Client's Name:	Site Location:	Project No.
RS&H Iowa, P.C.	Des Moines Airport Replacement Terminal	18R009.00







Client's Name:	Site Location:	Project No.
RS&H Iowa, P.C.	Des Moines Airport Replacement Terminal	18R009.00







Client's Name:	Site Location:
RS&H Iowa, P.C.	Des Moines Airport Replacement Terminal







Client's Name:	Site Location:	Project No.
RS&H Iowa, P.C.	Des Moines Airport Replacement Terminal	18R009.00







Client's Name:	Site Location:	Project No.
RS&H Iowa, P.C.	Des Moines Airport Replacement Terminal	18R009.00







RS&H Iowa, P.C. Des Moines Airport Replacement Terminal 18R009.00	Client's Name:	Site Location:	Project No.
	RS&H Iowa, P.C.	Des Moines Airport Replacement Terminal	18R009.00







Client's Name:	Site Location:	Project No.
RS&H Iowa, P.C.	Des Moines Airport Replacement Terminal	18R009.00







Client's Name: RS&H Iowa, P.C. Site Location:PDes Moines Airport Replacement Terminal1







Client's Name:	
RS&H Iowa, P.C.	

Photo No.

17

Katie Goff

**Description:** WUS-1

Taken: Northwest

Site Location: Project No. Des Moines Airport Replacement Terminal 18R009.00

Date: 5/9/18 **Direction Photo** Photo Taken By:





Client's Name:	Site Location:	Project No.
RS&H Iowa, P.C.	Des Moines Airport Replacement Terminal	18R009.00







Client's Name:	Site Location:	Project No.
RS&H Iowa, P.C.	Des Moines Airport Replacement Terminal	18R009.00

Photo No. 21	<b>Date:</b> 5/29/18	
Direction Photo Taken: South Photo Taken By: Katie Goff Description:		
Pond 1		A REAL PROPERTY AND ADDRESS OF A DESCRIPTION OF A DESCRIP





**Client's Name:** 

RS&H Iowa, P.C.

Site Location:	Project No.
Des Moines Airport Replacement Terminal	18R009.00







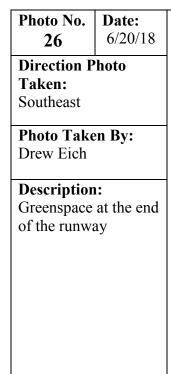
Client's Name: RS&H Iowa, P.C.

Photo No.<br/>25Date:<br/>6/20/18Direction Photo<br/>Taken:<br/>NorthwestDirection Photo

**Photo Taken By:** Drew Eich

**Description:** Greenspace at the end of the runway Site Location: Des Moines Airport Replacement Terminal









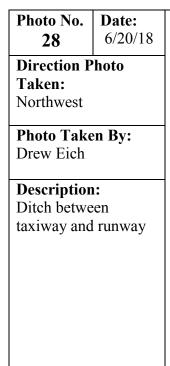
Client's Name: RS&H Iowa, P.C.

Photo No.<br/>27Date:<br/>6/20/18Direction Photo<br/>Taken:<br/>Northwest

**Photo Taken By:** Drew Eich

**Description:** Ditch between taxiway and runway Site Location: Des Moines Airport Replacement Terminal









**Date:** 6/20/18

#### **Photographic Log**

Client's Name: RS&H Iowa, P.C.

**Direction Photo** 

Photo Taken By:

Greenspace at the end

Photo No.

29

Taken: Southeast

Drew Eich

**Description:** 

of the runway

#### Site Location: Des Moines Airpo

Des Moines Airport Replacement Terminal







Client's Name: RS&H Iowa, P.C.

Photo No.<br/>31Date:<br/>6/20/18Direction Photo<br/>Taken:<br/>Southwest

**Photo Taken By:** Drew Eich

**Description:** Ditch between taxiway and runway Site Location: Des Moines Airport Replacement Terminal









Site Location: Des Moines Airport Replacement Terminal **Project No.** 18R009.00

Photo No.<br/>33Date:<br/>6/20/18Direction PhotoTaken:<br/>SouthwestPhoto Taken By:

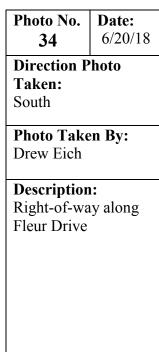
Drew Eich

**Client's Name:** 

RS&H Iowa, P.C.

**Description:** Greenspace at the end of the runway









Client's Name: RS&H Iowa, P.C.

Photo No.Date:356/20/18Direction PhotoTaken:NortheastPhoto Taken By:

Drew Eich

**Description:** Ditch between apron and runway



**Project No.** 18R009.00





Clients\RS & H Iowa\Replacement Terminal EA\Design\Reports\Task 8.14.1 Wetlands\Delineation\Attachments\180710\_Task 8.14.1\_Appendix C Photolog\_Final.docx



Client's Name: RS&H Iowa, P.C.

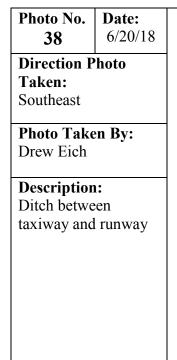
Photo No.<br/>37Date:<br/>6/20/18Direction Photo<br/>Taken:<br/>Northwest

**Photo Taken By:** Drew Eich

**Description:** Ditch between taxiway and apron











Client's Name: RS&H Iowa, P.C.

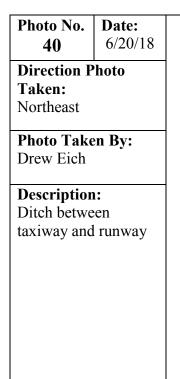
Photo No.<br/>39Date:<br/>6/20/18Direction Photo<br/>Taken:<br/>South

**Photo Taken By:** Drew Eich

**Description:** Low-lying area between Wetland 9 and the taxiway











Client's Name: RS&H Iowa, P.C.

Photo No.<br/>41Date:<br/>6/20/18Direction Photo<br/>Taken:<br/>Northwest

**Photo Taken By:** Drew Eich

**Description:** Right-of-way adjacent to SW 28<sup>th</sup> Street Site Location: Des Moines Airport Replacement Terminal **Project No.** 18R009.00



#### 

Right-of-way adjacent to Army Post Road





Client's Name: RS&H Iowa, P.C.

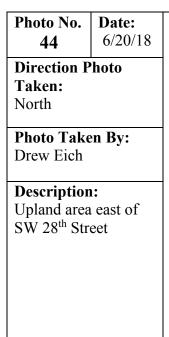
Photo No.<br/>43Date:<br/>6/20/18Direction PhotoTaken:<br/>North

**Photo Taken By:** Drew Eich

**Description:** Upland area east of SW 28<sup>th</sup> Street









# Appendix D

**Request for Corps JD** 

#### Appendix 1 - REQUEST FOR CORPS JURISDICTIONAL DETERMINATION (JD)

To: Rock Island District

•	I am requesting a JD on property lo	located at: 5800 Fleur Drive
---	-------------------------------------	------------------------------

	City/Township/Parish: <u>Des Moines</u> County: <u>Polk</u> State: <u>IA</u>						
	Acreage of Parcel/Review Area for JD: 850						
	Section: 29-32 Township: 78 North Range: 24 West						
	Latitude (decimal degrees): <u>41.519809</u> Longitude (decimal degrees): <u>-93.668397</u>						
	(For linear projects, please include the center point of the proposed alignment.)						
•	Please attach a survey/plat map and vicinity map identifying location and review area for the JD.						
•	<ul> <li>I currently own this property.</li> <li>I plan to purchase this property.</li> <li>I am an agent/consultant acting on behalf of the requestor.</li> </ul>						
	Other (please explain):						
•	Reason for request: (check as many as applicable)						
	I intend to construct/develop a project or perform activities on this parcel which would be designed to						
	avoid all aquatic resources.						
	I intend to construct/develop a project or perform activities on this parcel which would be designed to						
	avoid all jurisdictional aquatic resources under Corps authority.						
	X I intend to construct/develop a project or perform activities on this parcel which may require						
	authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.						
	I intend to construct/develop a project or perform activities on this parcel which may require authorization from						
	the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process.						
	I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is						
	included on the district Section 10 list and/or is subject to the ebb and flow of the tide.						
	<u>X</u> A Corps JD is required in order to obtain my local/state authorization.						
	<u>x</u> I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that						
	jurisdiction does/does not exist over the aquatic resource on the parcel.						
	I believe that the site may be comprised entirely of dry land.						
•	Other: Type of determination being requested:						
•	X Lam requesting an approved JD						
<u>×</u> I am requesting an approved JD.							
I am requesting a preliminary JD. Lam requesting a "no permit required" letter as I believe my proposed activity is not regulated							
	I am requesting a preiminary 5D. I am requesting a "no permit required" letter as I believe my proposed activity is not regulated. I am unclear as to which JD I would like to request and require additional information to inform my decision.						
	I am requesting a "no permit required" letter as I believe my proposed activity is not regulated. I am unclear as to which JD I would like to request and require additional information to inform my decision.						
	I am requesting a "no permit required" letter as I believe my proposed activity is not regulated. I am unclear as to which JD I would like to request and require additional information to inform my decision.						
per	I am requesting a "no permit required" letter as I believe my proposed activity is not regulated. I am unclear as to which JD I would like to request and require additional information to inform my decision. signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a son or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the						
per site	I am requesting a "no permit required" letter as I believe my proposed activity is not regulated. I am unclear as to which JD I would like to request and require additional information to inform my decision. signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a son or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property						
per site	I am requesting a "no permit required" letter as I believe my proposed activity is not regulated. I am unclear as to which JD I would like to request and require additional information to inform my decision. signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a son or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the						
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per site righ	I am requesting a "no permit required" letter as I believe my proposed activity is not regulated. I am unclear as to which JD I would like to request and require additional information to inform my decision. signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a son or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property ints to request a JD on the subject property. gnature:						
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per site righ	I am requesting a "no permit required" letter as I believe my proposed activity is not regulated. I am unclear as to which JD I would like to request and require additional information to inform my decision. signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a son or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the e if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property ints to request a JD on the subject property. gnature:						
per site righ	I am requesting a "no permit required" letter as I believe my proposed activity is not regulated.         I am unclear as to which JD I would like to request and require additional information to inform my decision.         signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a son or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property has to request a JD on the subject property.         gnature:						
per site righ	I am requesting a "no permit required" letter as I believe my proposed activity is not regulated.         I am unclear as to which JD I would like to request and require additional information to inform my decision.         signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a son or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property on the subject property.         gnature:						
per site righ	I am requesting a "no permit required" letter as I believe my proposed activity is not regulated.         I am unclear as to which JD I would like to request and require additional information to inform my decision.         signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a son or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property has to request a JD on the subject property.         gnature:						
per site righ	I am requesting a "no permit required" letter as I believe my proposed activity is not regulated.         I am unclear as to which JD I would like to request and require additional information to inform my decision.         signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a son or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property on the subject property.         gnature:						
per site righ	I am requesting a "no permit required" letter as I believe my proposed activity is not regulated. I am unclear as to which JD I would like to request and require additional information to inform my decision. signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a son or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the e if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property ints to request a JD on the subject property. gnature: Date:						

\*Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.

Principal Purpose: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above.

Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website. Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be evaluated nor can an AJD be issued.



Johnston, IA 50131 (515) 254-1393 • Fax: (515) 254-1642 www.foth.com

March 12, 2019

Ms. Abby Steele United States Army Corps of Engineers P.O. Box 2004, Clock Tower Building Rock Island, IL 61204-2004

Dear Ms. Steele;

RE: Section 404 Permit Application; Replacement Terminal Environmental Assessment Project, Des Moines International Airport, 5800 Fleur Drive, Des Moines, Iowa USACE No.: CEMVR-OD-P-2018-0866, IDNR No.: 15705

Foth Infrastructure & Environment, LLC has prepared the attached Section 404 Permit Application for the above-referenced site for RS&H Iowa, P.C. on behalf of the Des Moines Airport Authority. The Wetland and Waters of the United States (WUS) Delineation Report was submitted to the U.S. Army Corps of Engineers on July 10, 2018.

This submittal includes a Wetland Mitigation Plan, Biological Resource Field Survey, Architectural/Historic Intensive Survey and Evaluation, and Phase I Archeological Investigation. A copy of the Draft Environmental Assessment has not been included in this submittal, but can be provided upon request.

If you have any questions or need additional information, please contact me at 515-251-2524 or Eva.Moritz@Foth.com.

Sincerely, Foth Infrastructure & Environment, LLC

Eva Moritz, PE Licensed in IA Lead Environmental Engineer

Enclosures: Section 404 Permit and Maps Wetland & WUS Mitigation Plan Biological Resource Field Survey Architectural/Historic Intensive Survey and Evaluation Phase I Archeological Investigation Ms. Abby Steele United States Army Corps of Engineers March 12, 2019 Page 2

cc: Mr. David Full, RS&H Iowa, P.C. (404 Application only) IDNR Flood Plain Section (404 Application only) IDNR Sovereign Lands Section (404 Application only)

JOINT APPLICATION FORM FOR IOWA							
ITEMS 1 AND 2 FOR AGENCY USE							
1. Application Number.	2. Date Received						
3. AND 4. (SEE SPECIAL INSTRUCTIONS) NAM							
3a. Applicant's Name	3b. Co-Applicant/Property Owner Name (if needed or if different from applicant)	4. Authorized Agent (an agent is not required)					
Company Name (if any)	Company Name (if any)	Company Name (if any)					
Des Moines Airport Authority		Foth Infrastructure & Environment LLC					
Attention: Mr. Kevin Foley, Executive Director 5800 Fleur Drive	Address	Attention: Eva Moritz, P.E.					
Des Moines, Iowa 50321	Address	8191 Birchwood Court, Suite L Johnston, IA 50131					
kjfolev@dsmairport.com	Email address	Eva.moritz@foth.com					
Applicant's Phone Nos. w/area code	Applicant's Phone Nos. w/area code	Agent's Phone Nos. w/area code					
Business: (515) 256-5050	Business:	Business: 515-251-2524					
Cell:	Cell:	Cell: 515-210-6302					
Fax:	Fax:	Fax: 515-254-1642					
	STATEMENT OF AUTHORIZATION						
I hereby authorize,		gent in the processing of this application and to furnish,					
upon request, supplemental information in suppor	t or this permit application.						
Applicant's Signatur	<u>a</u>	Date					
5. ADJOINING PROPERTY OWNERS (Upstream		Duto					
See attached list	,						
6. PROJECT TITLE:							
Replacement Terminal Environmental Assessmer	t Project						
7. PROJECT DESCRIPTION (Include all features	):						
The Authority proposes to develop a replacement							
Proposed Action. The components of the Propose     Project 1: Construction of a Replaceme		de the following:					
<ul> <li>Project 1: Constitution of a Replacement</li> <li>Project 2: Demolition of the Existing Pas</li> </ul>							
		t Pad, and Relocation of the Storm Control Building					
<ul> <li>Project 4: Construction of an Elevated F</li> </ul>	· · · · · · · · · · · · · · · · · · ·	in all the control of the cloth control building					
<ul> <li>Project 5: Realignment of the Roadway</li> </ul>	-						
<ul> <li>Project 6: Construction of a New Parkin</li> </ul>	•						
<ul> <li>Project 7: Construction of a New Entry I</li> </ul>	Plaza to Parking						
Project 8: Construction of a New Exit Pl	aza from Existing Parking						
Project 9: Relocation of the Employee F	arking						
<ul> <li>Project 10: Relocation of the Cell Phone</li> </ul>	Lot						
<ul> <li>Project 11: Construction of a New Entry</li> </ul>	Intersection at Fleur Drive						
<ul> <li>Project 12: Relocation of Signature and</li> </ul>	DSM Flying Services						
<ul> <li>Project 13: Demolition of Buildings 34/3</li> </ul>							
<ul> <li>Project 14: Construction of General Avia</li> </ul>	-						
<ul> <li>Project 15: Expansion of the South Apro</li> </ul>							
Project 16: Construction of a New Taxiway Entry							
Project 17: Construction of a New Cargo Deicing Pad							
Project 18: Improvements to South Roadways and Parking							
Project 19: Construction of a New Rental Car Customer Service Building and Ready-Return Area							
Project 20: Construction Borrow Area							
<ul> <li>Project 21: Construction of a New Dry Detention Basin</li> <li>Project 22: Improvements to Fuel Road<sup>1</sup></li> </ul>							
Project 22: Improvements to Fuel Road     8. PURPOSE AND NEED OF PROJECT:							
The purpose of the proposed replacement terminal is to continue serving the needs of the community and continue to be an economic engine for the							
region.							
Submission of the appropriate form(s) is required by the Iowa Department of Natural Resources Flood Plain Management Program (also							
known as the Flood Plain Permits Section). The forms for various project types can be obtained online within http://floodplain.iowadnr.gov/							
or by calling 866/849-0321.							

<sup>&</sup>lt;sup>1</sup> Project 22 has been shown to have independent utility from the Proposed Action. Therefore, this project component has been removed from the Proposed Action and analyzed as part of the past airport action found in Section 4.5, *Cumulative Effects*, of the EA. However, this project component is still being shown in Figure 2, *Proposed Action* for reference of this project component's location.

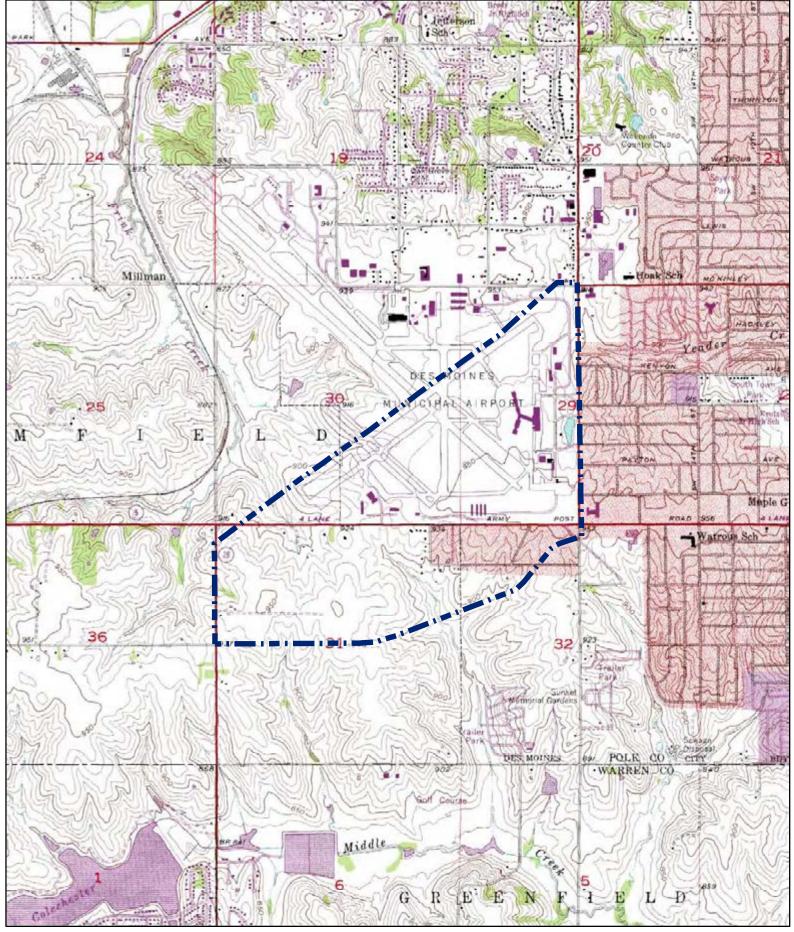
COMPLETE THE FOLLOWING FOUR BLOCKS IF DREE	DGED AND/OR FILL MATERIAL IS TO BE DISCHARGED
9. REASON(S) FOR DISCHARGE:	
Grading to create a borrow area for the Proposed Action.	
10. TYPE(S) OF MATERIAL BEING DISCHARGED AND THE AMOUNT OF	EACH TYPE IN CUBIC YARDS:
TYPE: Soil	
AMOUNT IN CUBIC YARDS: Unknown	
11. SURFACE AREA IN ACRES OF WETLANDS OR OTHER WATERS FIL	LED, AND STREAM LENGTH IF APPLICABLE (See Instructions)
0.33 acres of wetlands	
12. DESCRIPTION OF AVOIDANCE, MINIMIZATION, AND COMPENSATIO	ON (See Instructions)
The size of the borrow area was minimized to avoid impact to Wetlands 1, 3	, 4, 5 and 6 and the stormwater basin was designed to avoid permanent
impacts to WUS-1.	
13. PROJECT LOCATION	
	GIS Coordinates in NAD 1983 UTM Zone 15
LATITUDE: 41.52246	NORTHING: 4596976
LONGITUDE: -93.67206	EASTING: 443927
STREET, ROAD, OR OTHER DESCRIPTIVE LOCATION	LEGAL QUARTER SECTION TOWNSHIP RANGE
5800 Fleur Drive. The proposed borrow area is located northeast of SW 42nd Street and Army Post Road.	DESCR. 29, 30, 31 78 North 24 West
	and 32 WATERWAY RIVER MILE
☑ IN OR □ NEAR CITY OR TOWN (check appropriate box)           MUNICIPALITY NAME         Des Moines	Unnamed (if applicable)
MONICIFALITI NAME DES MOINES	C. H
COUNTY STATE ZIP CODE	
Polk Iowa 50321	
14. Date activity is proposed Construction of the Proposed Action would	Date activity is expected to be 2032
to commence occur over a 12-year period starting in 2020	completed
15. Is any portion of the activity for which authorization is	NOTE: If answer is "YES" give reasons in the Project
sought now complete? □ Yes ⊠ No	
Month and Year the activity was completed	Indicate the existing work on drawings.
16. List all approvals or certifications and denials from other Federal, intersta	te, state or local agencies for structures, construction, discharges, or other
activities described in this application.	· · ·
Issuing Agency Type of approval Identification	on No. Date of Application Date of Approval Date of Denial
17. CONSENT TO ENTER PROPERTY LISTED IN PART 13 ABOVE IS HE	REBY GRANTED. Xes 🗌 No
18. APPLICATION VERIFICATION (SEE SPECIAL INSTRUCTIONS)	
Application is hereby made for the activities described herein. I certify that I best of my knowledge and belief, such information is true, complete and acci	
activities.	diale. The mention of the proposed and a second s
Kim I Foling	March 11, 2019
Signature of Applicant or Authorized Agent	Date
Signature of Applicant or Authorized Agent	Date
Signature of Applicant or Authorized Agent	Date
Corps of Engineers IA Dept. of Natural Resources	ATTN: Sources Applicant's Copy
Revised 2011 ATTN: Floodplain Permit Sectio DNR FORM 36	n ATTN: Sovereign Lands DNR FORM 36
	NS FOR ADDRESS

RS & H Iowa\Replacement Terminal EA\Design\Reports\Task 8.14.1 Wetlands\404 Application\190305\_Task 8.14.1\_404 Permit Application\_Final.docx

ELECTRO MANAGEMENT CORP 111 SW JACKSON AVE DES MOINES IA 50315-1226	DES MOINES REGISTER & TRIBUNE CO PO BOX 750 FISHERS IN 46038-0750	IA PUBLIC EMPLOYEES RETIREMENT SYS 7401 REGISTER DRIVE DES MOINES IA 50321-2954		
ABC PARTNERS LP	ATLANTIC BOTTLING COMPANY	CITY OF DES MOINES		
1603 22 <sup>ND</sup> STREET SUITE 103	3600 ARMY POST RD	400 ROBERT D RAY DRIVE		
WEST DES MOINES IA 50266-1410	DES MOINES, IA 50321-2906	DES MOINES, IA 50309-1813		
ARMY POST DEVELOPMENT LC 1603 22ND STREET SUITE 103 WEST DES MOINES, IA 50266-1410	AIRPORT DEVELOPMENT LC KNAPP PROPERTIES 5000 WESTOWN PKWY SUITE 400 WEST DES MOINES, IA 50266-5921	IA ANNUAL CONF OF THE UNITED METHODIST CHURCH 2301 RITTENHOUSE STREET DES MOINES, IA 50321-3101		
FLEUR DE LIS MOTOR INN INC.	BARBRA BUTLER(TRUSTEE)	GARY FATINO		
6111 FLEUR DRIVE	8436 CHARLES CT	2900 DELAWARE AVE		
DES MOINES, IA 50321-2851	DOWNERS GROVE, IL 60516-4911	DES MOINES, IA 50317-3545		
SINGH DEV LLC	AFFLUENCE HOLDINGS LLC	RICHARD B MARGULIES		
5901 FLEUR DRIVE	5875 FLEUR DRIVE	1603 22ND STREET SUITE 103		
DES MOINES, IA 50321-2847	DES MOINES, IA 50321	WEST DES MOINES, IA 50266-1410		
ENGMAN FLEUR LLC	REG INVESTMENTS LLC	IOWA DEMOCRATIC PARTY		
3900 RIVER OAKS DRIVE	2310 STANTON AVE	5661 FLEUR DRIVE		
DES MOINES, IA 50312-4639	DES MOINES, IA 50321-2350	DES MOINES, IA 50321-2841		
PETERSON RR LLC	SONG LLC	WILLIAM D KECK		
5609 FLEUR DRIVE	4406 SW 33RD STREET	401 GRAND AVE		
DES MOINES, IA 50321-2841	DES MOINES, IA 50321-2700	DES MOINES, IA 50309-2381		
FLEUR CAR WASH LLC	RAKESH PATEL	GEORGE R KINLEY		
3036 N BIRCH AVE	5231 FLEUR DRIVE	5101 FLEUR DRIVE		
CUMMING, IA 50061-9305	DES MOINES, IA 50321-2833	DES MOINES, IA 50321-2831		
LVP HMI DES MOINES LLC 1985 CEDAR BRIDGE AVE SUITE 1 LAKEWOOD, NJ 08701-7031	G6 HOSPITALITY TAX DEPT. NUMBER 30 PO BOX 117508 CARROLLTON, TX 75011-7508	JAMES L MOSS (TRUSTEE) 100 WALL STREET LANSING, IA 52151-9714		

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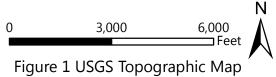
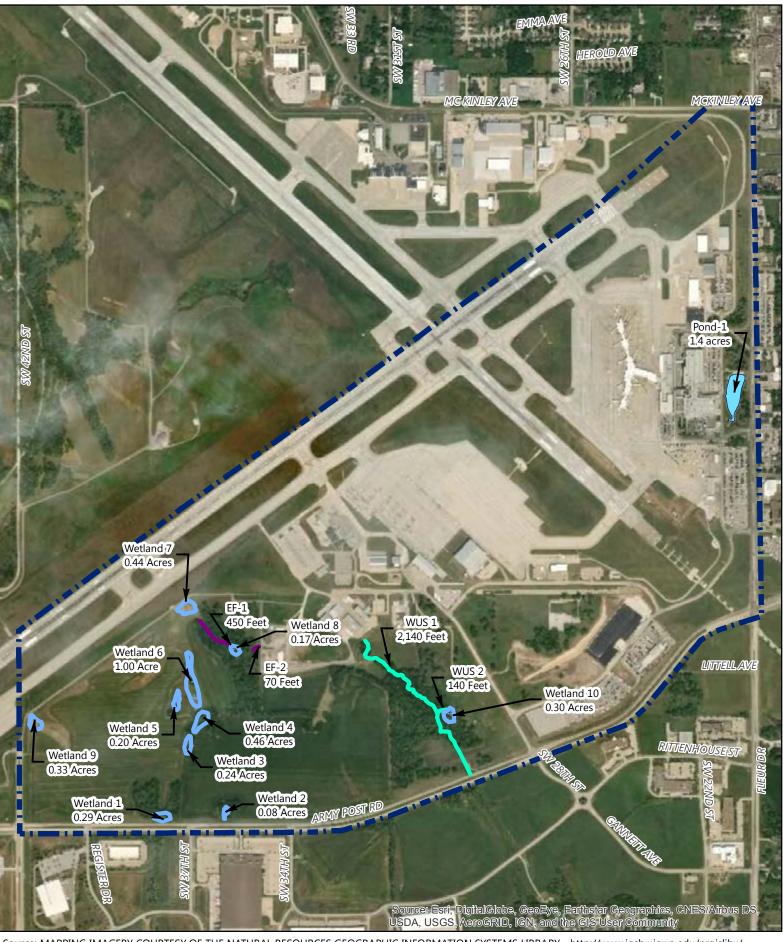




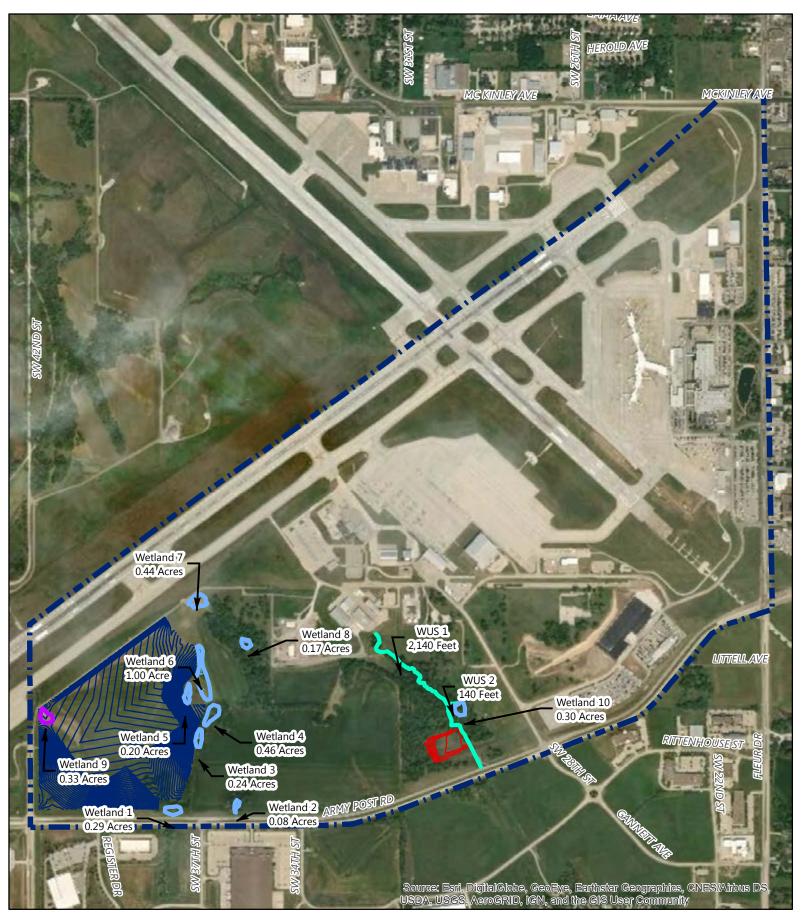
Figure 2 Proposed Action

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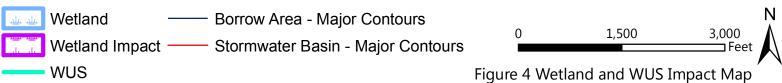
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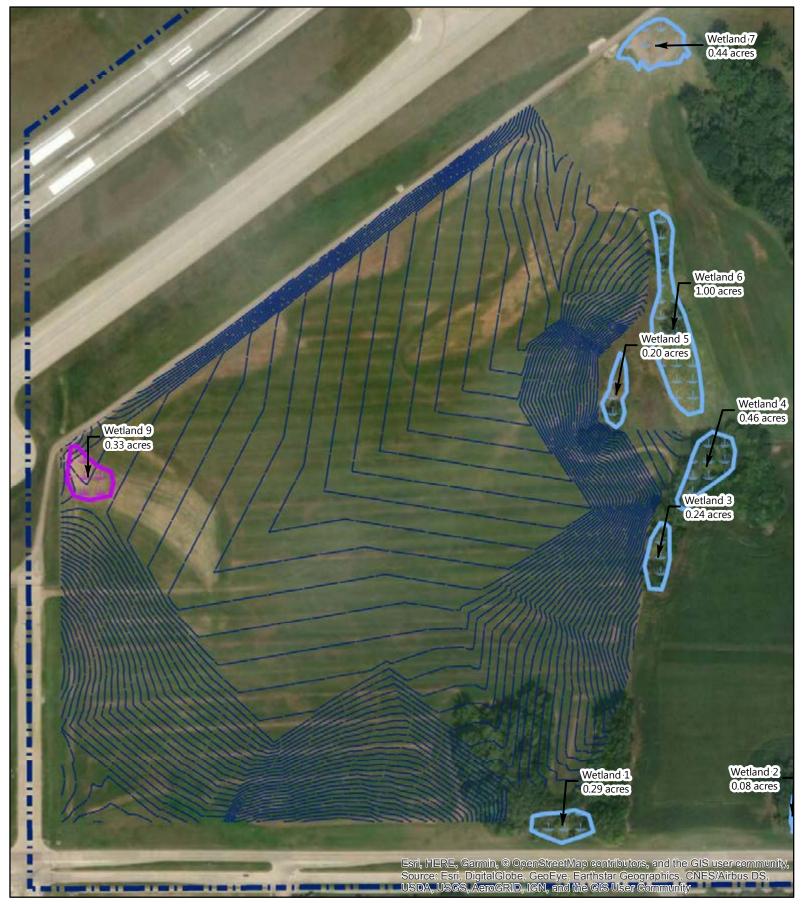




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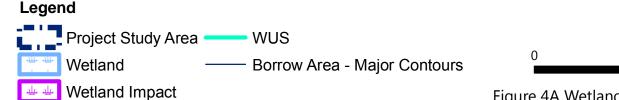


Figure 4A Wetland and WUS Impact Map

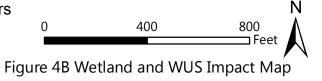
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WUS



## Report

# WETLAND MITIGATION PLAN

Replacement Terminal Environmental Assessment Project Des Moines International Airport Foth Project I.D.: 18R009.00 USACE No.: CEMVR-OD-P-2018-0866

RS&H Iowa, P.C. San Francisco, CA 94104

March 12, 2019





8191 Birchwood Court, Suite L Johnston, IA 50131 (515) 254-1393 • Fax: (515) 254-1642 www.foth.com

March 12, 2019

Ms. Abby Steele United States Army Corps of Engineers, Rock Island District Clock Tower Building P.O. Box 2004 Rock Island, IL 61204-2004

Dear Ms. Steele:

RE: Wetland Mitigation Plan; Replacement Terminal Environmental Assessment Project, Des Moines International Airport, 5800 Fleur Drive, Des Moines, Iowa USACE No.: CEMVR-OD-P-2018-0866, IDNR No.: 15705

Foth Infrastructure & Environment, LLC (Foth) has prepared the Wetland Mitigation Plan for RS&H Iowa, P.C. on behalf of the Des Moines Airport Authority.

If you have any questions regarding this report, please contact Eva at 515-254-2524 or eva.moritz@foth.com.

Sincerely,

Foth Infrastructure & Environment, LLC

D

Eva Moritz, PE Licensed in IA Lead Environmental Engineer

cc: Mr. David Full, RS&H Iowa, P.C.

## Distribution

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Replacement Terminal Environmental Assessment Project Des Moines International Airport Foth Project ID: 18R009.00 USACE No.: CEMVR-OD-P-2018-0866

> Prepared for RS&H Iowa, P.C. 369 Pine Street, Suite 610 San Francisco, CA 94104

Prepared by Foth Infrastructure & Environment, LLC

March 12, 2019

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Executive Summary

Foth was retained by RS&H Iowa, P.C. (RS&H) to develop a Wetland Mitigation Plan for Replacement Terminal Environmental Assessment project in Des Moines, Iowa. The Des Moines Airport Authority (Authority) proposes to develop a replacement passenger terminal building and other ancillary projects at the Des Moines International Airport. The Project Study Area covers approximately 850 acres and is located in Sections 29, 30, 31 and 32, Township 78 North, Range 24 West, Des Moines, Polk County, Iowa.

With the exception of Project 20, the proposed construction borrow area, the replacement passenger terminal building and other ancillary projects, collectively referred to as the Proposed Action, can be completed without impacting wetlands or WUS. Project 20 will impact 0.33 acres of jurisdictional wetlands; WUS will not be permanently impacted by the Proposed Action. The Authority is proposing to purchase 0.33 acres of emergent wetland credits from the Voas or McCorkle Mitigation Banks to offset the wetland impacts.



# List of Abbreviations, Acronyms, and Symbols

Airport	Des Moines International Airport
-	1
Authority	Des Moines Airport Authority
EA	Environmental Assessment
EF	Erosional Features
FAA	Federal Aviation Administration
Foth	Foth Infrastructure & Environment, LLC
USFWS	U.S. Fish and Wildlife Service
IDNR	Iowa Department of Natural Resources
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
OSA	Office of the State Archeologist
RS&H	RS&H Iowa, P.C.
SHPO	State Historic Preservation Office
T&E	Threatened and Endangered
Tallgrass	Tallgrass Archeology, LLC and Tallgrass-Full, LLC
USACE	U.S. Army Corps of Engineers
WUS	Waters of the United States

### 1 Introduction

Foth Infrastructure & Environment, LLC (Foth) was retained by RS&H Iowa, P.C. (RS&H) on behalf of the Des Moines Airport Authority (Authority) to develop a Wetland Mitigation Plan for the replacement passenger terminal building and other ancillary projects at the Des Moines International Airport (Airport). The Project Study Area covers approximately 850 acres and is located in Sections 29, 30, 31 and 32, Township 78 North, Range 24 West, Des Moines, Polk County, Iowa as depicted on Figure 1.

The Authority proposes to develop a replacement passenger terminal building and other ancillary projects at the Airport, herein referred to as the Proposed Action. The components of the Proposed Action, which are shown on Figure 2, include the following:

- Project 1: Construction of a Replacement Passenger Terminal Building
- Project 2: Demolition of the Existing Passenger Terminal Building
- Project 3: Construction of a Terminal Apron with New Deicing Pad, Remain Overnight Pad, and Relocation of the Storm Control Building
- Project 4: Construction of an Elevated Pedestrian Bridge
- Project 5: Realignment of the Roadway Loop/Curbside
- Project 6: Construction of a New Parking Structure
- Project 7: Construction of a New Entry Plaza to Parking
- Project 8: Construction of a New Exit Plaza from Existing Parking
- Project 9: Relocation of the Employee Parking
- Project 10: Relocation of the Cell Phone Lot
- Project 11: Construction of a New Entry Intersection at Fleur Drive
- Project 12: Relocation of Signature and DSM Flying Services
- Project 13: Demolition of Buildings 34/35
- Project 14: Construction of General Aviation Hangars
- Project 15: Expansion of the South Apron
- Project 16: Construction of a New Taxiway Entry
- Project 17: Construction of a New Cargo Deicing Pad
- Project 18: Improvements to South Roadways and Parking
- Project 19: Construction of a New Rental Car Customer Service Building and Ready-Return Area
- Project 20: Construction Borrow Area
- Project 21: Construction of a New Dry Detention Basin
- Project 22: Improvements to Fuel Road<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> Project 22 has been shown to have independent utility from the Proposed Action. Therefore, this project component has been removed from the Proposed Action and analyzed as part of the past airport action found in Section 4.5, Cumulative Effects, of the EA. However, this project component is still being shown in Figure 2, Proposed Action for reference of this project component's location.

Tributaries, creeks, wetlands, or ponds may be considered Waters of the United States (WUS) under the jurisdiction of the U.S. Army Corps of Engineers (USACE). Proposed impacts to a jurisdictional waterbody, including draining, filling, crossing, relocating, or discharging into the waterbody may require a Section 404 Permit from the USACE and a Section 401 Water Quality Certification from Iowa Department of Natural Resources (IDNR). Please note that only the USACE can make the final determination on the jurisdictional status of WUS and on the need for permit processing and compensatory mitigation.

Foth was retained to prepare a Section 404 Permit Application containing the applicable data, wetland jurisdictional rationale, and Proposed Action information to the USACE, IDNR Flood Plain Section, and IDNR Sovereign Lands Section. The scope of services also included preparing a Mitigation Plan to address Section 404 permitting requirements because wetlands will be impacted by the Proposed Action. This Mitigation Plan will summarize the wetland areas that will be impacted by the Proposed Action and will propose mitigation measures to offset the proposed impacts.

With the exception of Project 20, the proposed construction borrow area, the replacement passenger terminal building and other ancillary projects can be completed without impacting wetlands or WUS. This Mitigation Plan focuses on proposed wetland impacts that will occur as a result of Project 20, the construction borrow area. Additional improvements near a proposed stormwater basin will also be discussed, although permanent wetland and WUS impacts are not proposed at that location.

## 2 Project Purpose and Alternatives Analysis

The purpose of the proposed replacement terminal is to continue serving the needs of the community and continue to be an economic engine for the region, as documented in the Draft Environmental Assessment (EA) prepared by RS&H (RS&H, 2019). To do this, the goals and objectives of the Authority are to:

- 1. Modernize the passenger terminal and associated on-Airport facilities.
- 2. Better accommodate the existing and forecast increase in passengers (enplanements).
- 3. Enhance efficiency of aircraft movement on the apron.

The proposed terminal replacement is needed to meet the current enplanement demand while also providing space for growth as it relates to enplanements. Many facilities in the terminal are out-of-date and the number of passengers currently traveling though the Airport exceed the terminal building's capabilities. This issue will only be exacerbated with the continued increase in passengers as forecast in the Federal Aviation Administration's (FAA) Terminal Area Forecast. The proposed replacement passenger terminal would not induce any increase in passengers.

The passenger terminal is a critical part of an airport. It is important to select a location for the passenger terminal that provides adequate landside, airside, and circulation space with room to expand to meet future demand. In the case of building a replacement terminal, the location of the existing terminal is important, as existing air carrier operations could be affected with construction of the replacement terminal. Such factors are taken into account when considering

the location of the replacement terminal. Four alternatives for the location of the passenger terminal building were identified and taken through the screening process. The No Action Alternative was also evaluated. Additional information regarding alternatives for the Proposed Action are discussed in the Draft EA (RS&H, 2019), which can be provided to the USACE upon request.

#### 3 Baseline Information

The Wetland & WUS Delineation Report (Foth, 2018a) identified 3.51 acres of wetlands, a 1.4 acre pond, 2,280 feet of WUS, and 520 feet of Erosional Features (EF) within the Project Study Area. The locations of the wetlands, pond, WUS, and EF are depicted on Figure 3 and the proposed impacts are depicted on Figures 4 to 4B. Summaries of the delineated features can be found on Tables 1, 2A and 2B in Appendix A.

In a letter dated October 17, 2018, the USACE indicated that the delineated wetlands and WUS were jurisdictional while the erosional features and pond were determined to be non-jurisdictional. A copy of the Preliminary Jurisdictional Determination letter is included in Appendix B. The non-jurisdictional erosional features and pond have not been discussed in this report since mitigation is not required for impacts to those areas.

#### 3.1 Wetland Areas 1 through 8 and 10

Wetland Areas 1 through 8 and 10 will not be impacted by the Proposed Action.

#### 3.2 Wetland Area 9

Wetland Area 9 is located in a low-lying area at the end of a culvert in the southern portion of the Project Study Area. The entire 0.33 acres wetland will be impacted by grading for a borrow area for the Proposed Action, as shown on Figure 4A. Wetland 9 is an emergent wetland dominated by reed canary grass and cattail species.

#### 3.3 WUS-1

A stormwater detention basin will be constructed adjacent to WUS-1, as shown on Figure 4B. During construction, the banks of WUS-1 may be temporarily impacted and re-shaped as the basin is constructed; however, permanent impacts are not proposed. Because the temporary impacts to WUS-1 will not affect the flowline of the channel, mitigation is not proposed.

#### 3.4 WUS-2

WUS-2 will not be impacted by the Proposed Action.

## 4 Mitigation for Wetland Impacts

#### 4.1 Mitigation Site Selection and Justification

During the mitigation process, several alternate mitigation options were evaluated. Based on mitigation guidelines, the USACE has the following preferences for wetland mitigation:

- 1. Wetland Mitigation Banks
- 2. In-Lieu Fee Mitigation
- 3. Permittee-Responsible Watershed-Based Mitigation
- 4. Permittee-Responsible On-Site and In-Kind Mitigation
- 5. Permittee-Responsible Off-Site and/or Out-Of-Kind Mitigation

The wetland impacts will be mitigated at the Voas Mitigation Bank in Dallas County or the McCorkle Mitigation Bank in Sac County. The west corner of the Project Study Area, including Wetland 9, is located within the North Raccoon watershed, which is within the primary service area of both banks. The remainder of the Project Study Area is located within the Lake Red Rock watershed, which is within the secondary service area of both banks.

Mitigation banks are preferred by the USACE because they consolidate resources, provide financial assurances, and often have professional management and monitoring. Because a bank was available, options for in-lieu fee, watershed-based mitigation, or permittee responsible mitigation were not evaluated.

#### 4.2 Mitigation Ratio Determination Methodology

The USACE has provided guidance for mitigation ratios based on the type of wetland that will be impacted. The following table summarizes the USACE's guidelines:

Recommended Mitigation Ratio	Wetland Type		
1.0 : 1 to 1.5 : 1	Emergent Wetlands Farmed Wetlands Wetlands Dominated by Invasive Species		
1.5 : 1 to 2.5 : 1	Emergent Wetlands Dominated by native wet prairie species, sedge meadows, etc.		
2.0 : 1 to 3.0 : 1	<u>Forested Wetlands</u> >50% aerial cover of trees in GIS Requires 10 years of monitoring with reports biannually		
Case-by-case	<u>Difficult to Replace Wetlands</u> Bogs, fens, hillside seeps		
1:1	In-kind Mitigation Bank		

#### Table 4-1 - USACE Mitigation Ratio Guidance

Based on the proposed mitigation ratio shown on Table 1 in Appendix A, 0.33 acres of emergent credits will be purchased from the Voas or McCorkle Mitigation Banks as mitigation for the

proposed wetland impacts. Once the USACE has approved the mitigation plan, a Debit Request Form will be submitted to the selected bank.

### 5 Responsible Party

The Authority will be responsible for purchasing credits from the Voas or McCorkle Mitigation Banks, which will fulfill the mitigation requirement for the Proposed Action. The responsible party can be reached at the following address:

> Mr. Kevin Foley, Executive Director & General Manager Des Moines Airport Authority 5800 Fleur Drive Des Moines, Iowa 50321 (515) 256-5050

## 6 Financial Assurances

The Authority is not proposing financial assurances since purchasing bank credits will fulfill the mitigation requirements for the Proposed Action.

## 7 Monitoring Requirements

We do not anticipate that an as-constructed report or annual monitoring will be required for the proposed mitigation measures.

- 8 Agency Coordination
- 8.1 Threatened & Endangered Species

According to the U.S. Fish and Wildlife Service (USFWS), the following Threatened and Endangered (T&E) species are known to exist in Polk County, Iowa.

Group	Name	Status	Habitat
Birds	Least tern (Sterna antillarum)	Endangered	Barren river sandbars (USFWS, 2013)
Mammals	Indiana bat (Myotis sodalis)	Endangered	During summer they roost under the peeling bark of dead and dying trees. (USFWS, 2016a)
Mammals	Northern long-eared Bat ( <i>Myotis septentrionalis</i> )	Threatened	Underneath bark, in cavities, or in crevices of both live and dead trees. Males and non-reproductive females may also roost in cooler places, like caves and mines (USFWS, 2016b)

#### Table 8-1 - Federally-Listed T&E Species

Group	Name	Status	Habitat
Flowering Plants	Prairie bush-clover (Lespedeza leptostachya)	Threatened	Native prairie areas and pastures that have retained many of the original prairie species. (Iowa Department of Agriculture and Land Stewardship)
Flowering Plants	Western prairie fringed orchid ( <i>Platanthera</i> <i>praeclara</i> )	Threatened	Wet prairie and sedge meadows (USFWS, 2016c)

(USFWS, 2018)

Foth prepared a Biological Resource Field Survey for the Project Study Area (Foth, 2018b) which was used as part of the Draft EA. Suitable habitat for the least tern is not present within the Project Study Area due to the lack of barren river sandbars. Suitable habitat for the prairie bush clover or Western prairie fringed orchid is not present within the Project Study Area due to historic farming practices, maintenance of the airport facilities, and the lack of native prairie and native wetland areas.

During the site visit, representative sample sites were evaluated for the two federally-listed bat species. Three sites were observed to have trees with loose and peeling bark or hollows/crevices that may be suitable habitat for the Indiana bat or Northern long-eared bat. All three sites are located within wooded drainageways in the central portion of the Project Study Area near WUS-1 and the trees observed in those areas had a limited number of branches with loose or peeling bark. The remaining sample sites did not contain suitable habitat due to size of trees and the lack of suitable snags. The overall suitability of the Project Study Area for T&E bat species habitat is low.

The Draft EA concluded that the habitats within the Project Study Area are not unique, rare, or protected (RS&H, 2019). During construction, direct mortality to individual animals could occur due to excavation and grading. The Project Study Area has low overall suitability for two federally-listed bat species. The Proposed Action may include the removal of trees as part of the creation or maintenance of stormwater detention areas and/or construction borrow area. The Proposed Action would not affect trees that were identified as suitable habitat in the Biological Resources Field Survey. The Proposed Action would not likely result in a direct adverse effect but may result in indirect adverse effects to the Indiana bat and/or Northern long-eared bat through the loss of foraging habitat. Suitable habitat for the Western prairie fringed orchid, prairie bush clover or least tern was not present within the Project Study Area.

A copy of the Biological Resource Field Survey was submitted to the USACE along with the Section 404 Permit Application on March 12, 2019.

### 8.2 Cultural Resource Survey

Tallgrass Archeology, LLC and Tallgrass-Full, LLC, herein referred to as Tallgrass, performed an Architectural/Historic Intensive Survey and Evaluation (Tallgrass, 2018a) and a Phase I Archeological Investigation (Tallgrass, 2018b) as part of the draft EA.

Six archaeological resources were identified during the Phase I Archaeological Investigation conducted for the Proposed Action. These sites are located within the Direct Area of Potential Effect and all were recommended as not eligible for inclusion in the National Register of Historic Places (NRHP). The Phase I Archeological Investigation identified a potential historic cemetery that was represented on a single plat map dating from 1907. Based on that plat, the location is estimated to be near Project 22, the proposed fuel road. During initial correspondence, the State Historic Preservation Office (SHPO) recommended additional consultation with the Office of the State Archaeologist (OSA) to determine a more accurate location of the historic cemetery. OSA recommended monitoring during construction of the fuel road or preconstruction mechanical scraping in order to identify any potential grave features prior to construction activities. The purpose of pre-construction monitoring would be to ensure that the site, if present at this location, is not adversely affected by the proposed undertaking. Tallgrass is currently coordinating the pre-construction monitoring of the potential historic cemetery, which is anticipated to occur in the winter or spring of 2019. The findings of the preconstruction monitoring will be documented to SHPO and the OSA. Copies of select SHPO correspondence can be found in Appendix B.

The intensive architectural/historic investigation for the Proposed Action recommended the existing terminal building and Building 35 as not eligible for inclusion in the NRHP as individual buildings. In addition, an assessment of the Airport as a potential historic district, recommended the Airport not eligible for inclusion in the NRHP.

A copy of the Architectural/Historic Intensive Survey and Evaluation and Phase I Archeological Investigation were submitted to the USACE along with the Section 404 Permit Application on March 12, 2019.

### 9 Summary

The Authority proposes to develop a replacement passenger terminal building and other ancillary projects at the Airport. The Project Study Area covers approximately 850 acres and is located in Sections 29, 30, 31 and 32, Township 78 North, Range 24 West, Des Moines, Polk County, Iowa. With the exception of Project 20, the construction borrow area, the replacement passenger terminal building and other ancillary projects can be completed without impacting wetlands or WUS. The creation of a stormwater detention basin will also cause temporary impacts to the banks of WUS-1; mitigation for the temporary impact is not proposed because the grading will not affect the flowline of the channel.

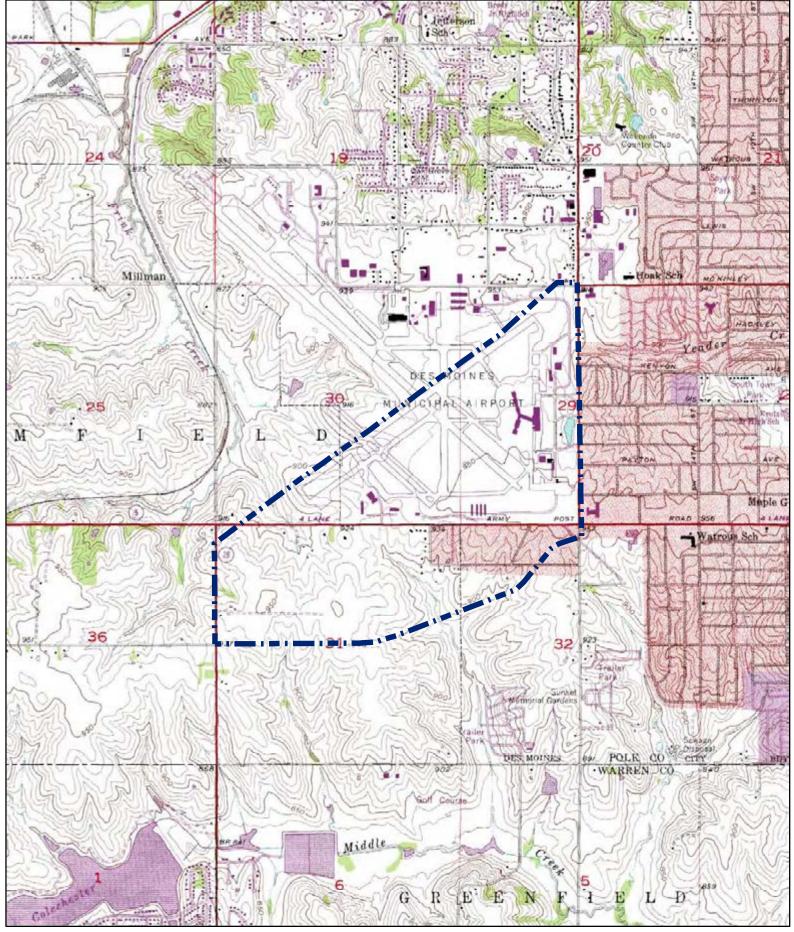
The proposed construction borrow area will impact 0.33 acres of jurisdictional wetlands; WUS will not be permanently impacted by the Proposed Action. The Authority is proposing to purchase 0.33 acres of emergent wetland credits from the Voas or McCorkle Mitigation Banks as mitigation to offset the wetland impacts.

#### 10 References

Foth. (2018a). Wetland & WUS Delineation Report. Johnston.

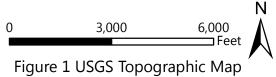
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Figures



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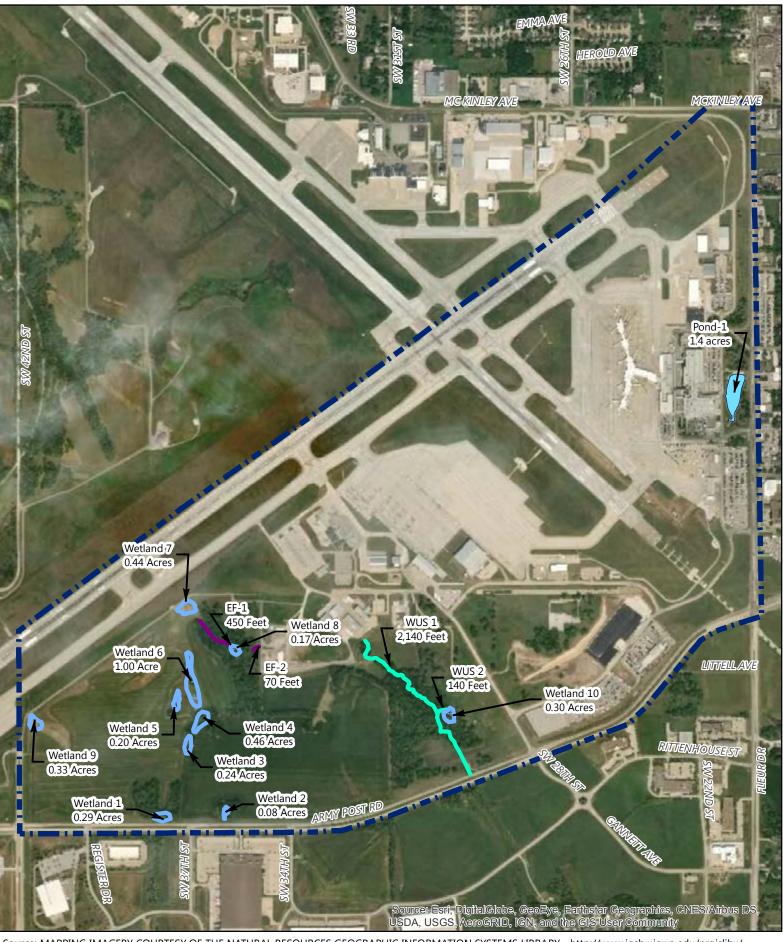


#### Legend

- Replacement Passenger Terminal Building (1)
- Building Demolition (2, 13)
- Apron Expansion (3, 15)
- Elevated Pedestrian Bridge (4)
- Roadway Loop/Curbside Realignment (5)
- Parking Structure (6) Entry Plaza to Parking (7) Exit Plaza from Parking (8) Employee Parking (9) Cell Phone Lot (10)
- Entry Intersection at Fleur Drive (11) Signature and DSM Flying Services Relocation (12) General Aviation Hangars (14) Taxiway Entry (16) Cargo Deicing Pad (17)
- South Roadway and Parking Improvements (18) Construction Borrow Area (20) Dry Detention Basin (21) Fuel Road Improvements (22)

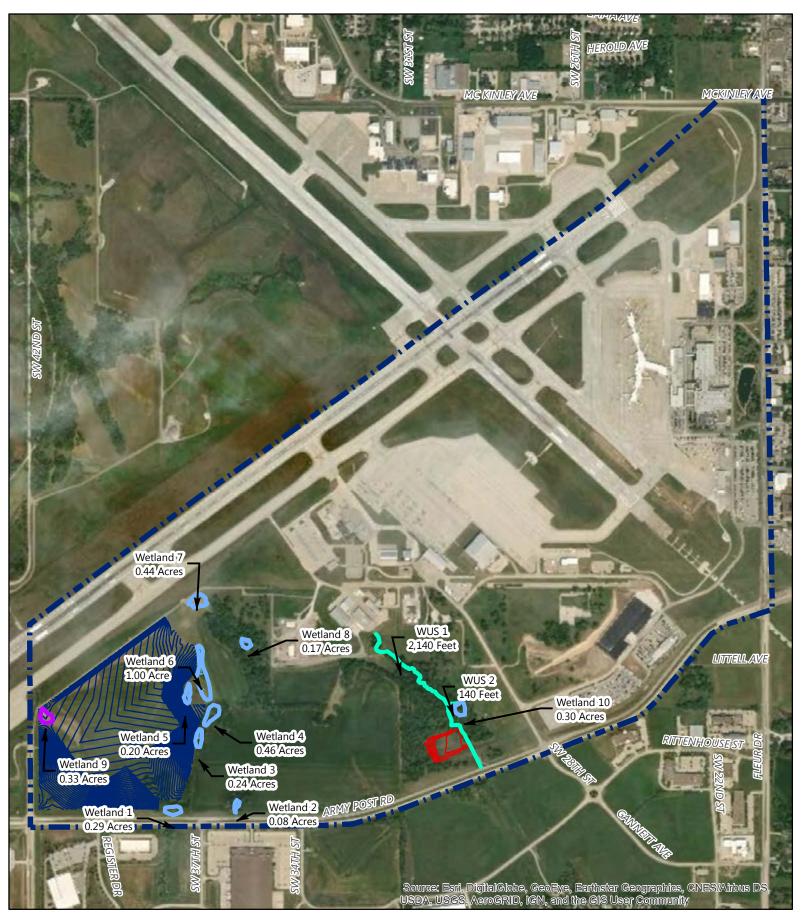
Rental Car Customer Service Building and Ready-Return Area (19)

Figure 2 Proposed Action



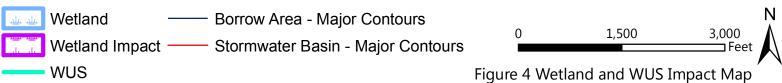
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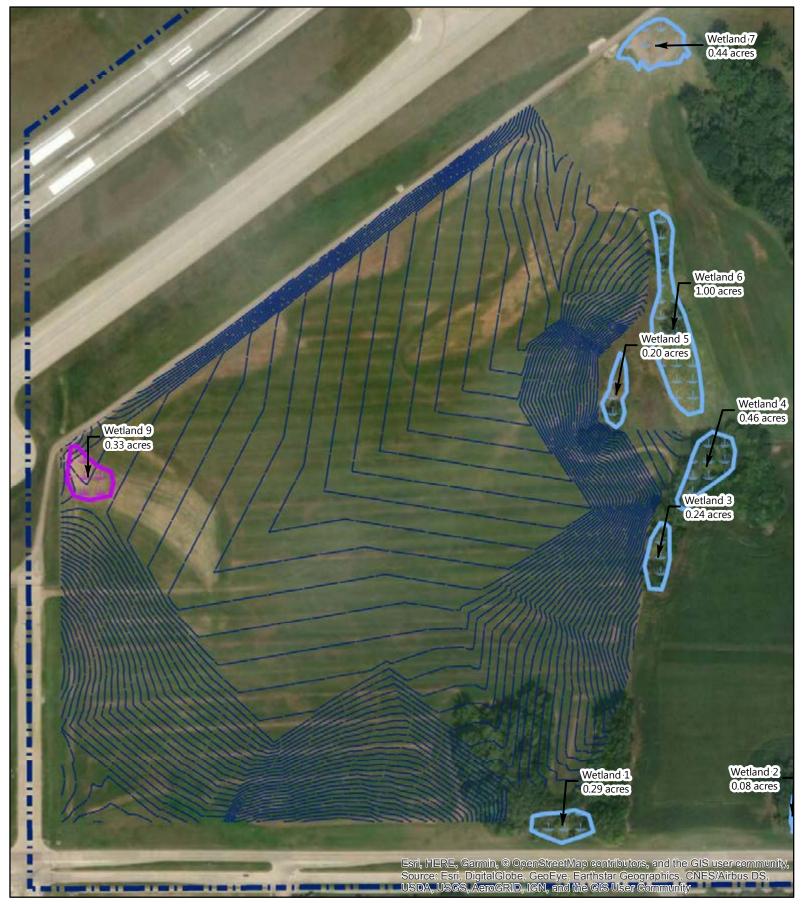




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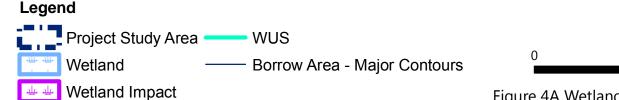


Figure 4A Wetland and WUS Impact Map

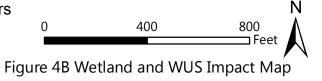
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WUS



Appendix A Tables

#### Table 1 - Wetland Summary Replacement Terminal, Des Moines International Airport 5800 Fleur Drive Des Moines, Iowa

Wetland	Delineated Area (acres)	Regulated Wetland Impact (acres)	Mitigation Ratio <sup>1</sup>	Wetland Mitigation Area (acres)	Mitigation Bank Multiplier <sup>2</sup>	Wetland Mitigation Credits (acres)	Delineated Wetland Type
WL-1	0.29				2		Emergent
WL-2	0.08				2		Emergent
WL-3	0.24				2		Emergent
WL-4	0.46				2		Emergent
WL-5	0.20				2		Emergent
WL-6	1.00				2		Emergent
WL-7	0.44				2		Emergent
WL-8	0.17				2		Forested
WL-9	0.33	0.33	1.0 : 1	0.33		0.33	Emergent
WL-10	0.30				2		Forested
Total	3.51	0.33		0.33		0.33	

Prepared by: <u>ESM</u> Checked by: <u>RPB</u>

<sup>1</sup> The following mitigation ratios are recommended by the USACE based on wetland type:

	1.0:1	In-kind mitigation at an approved mitigation bank
	1.1:1 to 1.5:1	Emergent (Low Quality) - farmed wetlands or wetlands dominated by invasive species
	1.5:1 to 2.5:1	Emergent (Native) - dominated by native wet prairie species, sedge meadows, etc.
	2.0:1 to 3.0:1	Forested - greater than 50% aerial cover of trees on GIS, requires minimum of 10 years of monitoring with biannual reports
	Case-by-Case	Difficult to replace wetlands - bogs, fens, hillside seeps
2		

 $^{2}$  A mitigation bank multiplier is being applied to the portions of the project that are within the Secondary Service Area of the bank. Wetland 9 is the only wetland within the Primary Service Area of the bank.

#### Table 2A - Waters of the U.S. Summary Replacement Terminal, Des Moines International Airport 5800 Fleur Drive Des Moines, Iowa

Water of the U.S. (WUS)	Delineated Length (feet)	Non-Regulated WUS Length (feet) <sup>1</sup>	Regulated WUS Impact (feet)	Purpose of Impact
WUS-1	2,140			
WUS-2	140			
EF-1	450	450		
EF-2	70	70		
	2,800	520	0	

#### Table 2B - Pond Area Summary

WUS	Delineated Area (acres)	Non-Regulated Pond Area (acres) <sup>1</sup>
Pond 1	1.4	1.4
	1.4	1.4
1		

<sup>1</sup> Mitigation not required for non-jurisdictional WUS.

Prepared by: <u>ESM</u> Checked by: <u>RPB</u>

# Appendix B Project Correspondence



DEPARTMENT OF THE ARMY CORPS OF ENGINEERS, ROCK ISLAND DISTRICT PO BOX 2004 CLOCK TOWER BUILDING ROCK ISLAND, ILLINOIS 61204-2004

October 17, 2018

**Operations Division** 

SUBJECT: CEMVR-OD-P-2018-0866

Mr. David Full RS&H Iowa, P.C. 369 Pine Street, Suite 610 San Francisco, California 94104

Dear Mr. Full:

Our office reviewed your application, which was received on July 12, 2018, concerning your request for a Jurisdictional Determination for the Des Moines International Airport Site located in Sections 29, 30, 31 & 32, Township 78 North, Range 24 West, Polk County, Iowa.

Our office has completed a Preliminary Jurisdictional Determination concerning your project. area and it appears that 0.84 acres of forested wetland, 2.67 acres of emergent wetland and approximately 2,280 linear feet of stream are jurisdictional.

A copy of our Preliminary Jurisdictional Determination is enclosed. You do not need to respond to the Corps regarding the Preliminary JD. This Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD. You are advised that this jurisdictional determination for your project is valid for five years from the date of this letter. If the project is not completed within this five-year period or your project plans change, you should contact our office for another determination.

This letter also contains an approved jurisdictional determination for the two erosional features, totaling 520 linear feet and a 1.2 acre pong that are located in the project area. The two erosional features have been identified to be non-jurisdictional due to the lack of defined bed and bank as well as having no ordinary high water mark. The pond, found on the east of the property, has been determined to be a manmade structure created on dry land to collect and retain water and is therefore not jurisdictional. The discharge of dredged or fill material into these identified non-jurisdictional waters will not require Department of the Army authorization.

If you object to this approved jurisdictional determination, you may request an administrative appeal under Corps regulations found at 33 CFR Part 331. Enclosed is a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this approved jurisdictional determination, you must submit a completed RFA form to the Mississippi Valley Division Office at the following address:

Should you have any questions, please contact our Regulatory Branch by letter, or telephone Abby Steele at 309/794-5377.

Sincerely,

ayes

Michael D. Hayes Chief, Iowa Permit Section Regulatory Branch

Enclosure

Copy Furnished:

Ms. Christine Schwake (3) Iowa Department of Natural Resources Water Resources Section Wallace State Office Building 502 East 9<sup>th</sup> Street Des Moines, Iowa 50319-0034

Ms. Eva Moritz Foth 8191 Birchwood Court, Suite L Johnston, Iowa 50131



DEPARTMENT OF THE ARMY CORPS OF ENGINEERS, ROCK ISLAND DISTRICT PO BOX 2004 CLOCK TOWER BUILDING ROCK ISLAND, ILLINOIS 61204-2004

April 3, 2019

**Operations** Division

SUBJECT: CEMVR-OD-P-2018-0866

Attn: Mr. Kevin Foley Des Moines Airport Authority 5800 Fleur Drive Des Moines, Iowa 50321

Dear Mr. Foley:

Our office has reviewed your application received March 14, 2019, concerning the proposed Des Moines Airport terminal replacement project that will permanently impact 0.33 acres of emergent wetland and temporarily impact approximately 200 linear feet of stream in Sections 29, 30, 31 & 32, Township 78 North, Range 24 West, Polk County, Iowa.

Your project is authorized under Nationwide Permit No. 39, provided you meet the Nationwide Permit terms and conditions which are contained in the enclosed Fact Sheet No. 8 (IA) including the Iowa Regional Conditions, the Section 401 Water Quality Certification issued by the Iowa Department of Natural Resources which is included in the Fact Sheet, and any special conditions that have been included in this nationwide permit verification letter. The Corps has made a determination of no effect on federally threatened and endangered species or critical habitat. The decisions regarding these actions are based on information found in the administrative record, which documents the District's decision-making process, the basis for the decisions, and the final decisions.

Your permit includes the following special condition(s):

Prior to construction you must purchase 0.33 emergent wetland acre/credits from an approved Wetland Mitigation Bank and provide this office with proof of purchase.

Please contact our office if the project plans change and there are different impacts caused by the discharge of dredged or fill material into Corps' regulated waters. This may require modification of your Department of the Army 404 authorization.

This verification is valid until March 18, 2022, unless the nationwide permit is modified, reissued or revoked. It is your responsibility to remain informed of changes to the nationwide permit program. We will issue a public notice announcing any changes if and when they occur. Furthermore, if you commence or are under contract to commence this activity before the date the nationwide permit is modified or revoked, you will have twelve months from this date to complete your activity under the present terms and conditions of this nationwide permit.

This authorization does not eliminate the requirement that you must still obtain other applicable Federal, state, and local permits. If you have not already coordinated your project with the IADNR, please contact them by telephone 866/849-0321 to determine if a floodplain development permit is required for your project. You should also contact Mr. Seth Moore, in writing or telephone 515/725-8464 to determine if a sovereign lands construction permit is required or if this project may adversely impact Iowa threatened or endangered species or their habitat.

You are required to complete and return the enclosed "Completed Work Certification" form upon completion of your project in accordance with General Condition No. 30 of the nationwide permits.

The Rock Island District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete the attached postcard and return it or go to our Customer Service Survey found on our web site at *http://corpsmapu.usace.army.mil/cm\_apex/f?p=regulatory\_survey*. (Be sure to select "Rock Island District" under the area entitled: Which Corps office did you deal with?)

Should you have any questions, please contact our Regulatory Branch by letter, or telephone Abby Steele at 309/794-5377.

Sincerely,

aut g. Enter

Matthew A. Zehr Chief, Iowa Permit Section Regulatory Branch

When the structure(s) or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s), of the property. To validate the transfer of this nationwide permit and the liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

Transferee

Date

Copies Furnished:

w/o enclosures:

Ms. Christine Schwake (3) Iowa Department of Natural Resources Water Resources Section Wallace State Office Building 502 East 9<sup>th</sup> Street Des Moines, Iowa 50319-0034

Ms. Eva Moritz Foth Infrastructure & Environment, LLC 8191 Birchwood Court, Suite L Johnston, Iowa 50131

<u>APPENDIX G</u>

AIR QUALITY - CONSTRUCTION EMISSION INVENTORY

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Protocol       Protocol <th< td=""><td>Front Loader for Subgrade Materials</td><td></td><td>Diesel</td><td>100</td><td>0.21</td><td>4.557147 3.625292 693.784 0.004159</td><td>0.649179 0.597245 0.731048</td><td>0.89787357</td><td>Front Loader/Scraper (to clear lot)</td><td>79</td><td>7,560.31</td><td>6,014.36</td><td>1,150,987.59</td><td>6.90</td><td>1,076.99</td><td>990.83</td><td>1,212.81</td><td></td></th<>	Front Loader for Subgrade Materials		Diesel	100	0.21	4.557147 3.625292 693.784 0.004159	0.649179 0.597245 0.731048	0.89787357	Front Loader/Scraper (to clear lot)	79	7,560.31	6,014.36	1,150,987.59	6.90	1,076.99	990.83	1,212.81	
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Loader         Devel         175         0.59         0.54368         1.4738         58.243         0.1442         0.1739         0.1442         0.172         0.1442         0.172         1.172         1.16         7.7         1.16         7.7         1.16         7.7         1.16         7.7         1.16         7.7         0.13         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3         2.7.3 <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>297</td> <td>28,006.55</td> <td>86,715.96</td> <td>56,395,670.12</td> <td>282.19</td> <td>3,602.26</td> <td>3,314.07</td> <td>15,055.95</td> <td>46,704.48</td>	-									297	28,006.55	86,715.96	56,395,670.12	282.19	3,602.26	3,314.07	15,055.95	46,704.48
Inc Opport         Dees         1         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         <										1 772	-	-	-	-	-	-	-	62 602 01
Name         Instruction         Object         75         0.11         0.447775         5.08.321         69.3.37         0.00429         0.57778         0.91136         0.22112508         Man Lift (Facia Construction)         5.8.12         5.8.28.0.358.43         3.2.73.55         478,564.25         440,079.11         69.050.33         1.6.3.57           Man Lift (Facia Construction)         Diese         0.0         0.07673         0.0723         0.0133         0.0132         0.0232         0.0213         0.0132         0.02121508         Man Lift (Facia Construction)         0.1         0.1         0.1         0.1         0.012         0.012         0.012         0.013         0.0232         0.0213         0.0132         0.0232         0.0213         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132         0.0132										1,772	-	270,764.35	-	-	- 27,545.12	- 25,155.07	- 52,575.22	05,092.91
Masonry Saw         Diesel         40         0.59         0.678.42         3.48.30         9.59         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.003185         0.0031855         0.0031855         0.0031855         0.0031855         0.000										48,384	3,412,261.72	3,872,141.71	528,280,358.43	3,273.55	478,564.25	440,279.11	694,500.33	168,507.9
Material Deliveries         Desel         Geod         G. 50         O. 26.639         O									Man Lift (Fascia Construction)		-	-	-	-	-	-	-	-
Mucher         Dies         10         0.43         1.92961         3.46493         589.172         0.03558         0.34203         0.3140         0.39496         0.050535936         Mucher         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I </td <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Material Deliveries</td> <td>960</td> <td>90 526 23</td> <td>280 294 01</td> <td>182 280 03/ 73</td> <td>012 13</td> <td>11 6/3 65</td> <td>10 712 16</td> <td>48 665 71</td> <td>150 964 0</td>	-								Material Deliveries	960	90 526 23	280 294 01	182 280 03/ 73	012 13	11 6/3 65	10 712 16	48 665 71	150 964 0
Off-Road Truck       Diese       0.00       0.02637       0.82478       0.03626       0.03120       0.0442071       Off-Road Truck       273       8.807150       8.607150       5.6395,67.02       2.82.19       3.602.26       3.14.07       1.505.55       4.670.448         Other General Equipment       Diese       175       0.43       0.4397       17.373       8.304.68       0.01264       0.12123       0.10125       0.10125       0.10244487       Other General Equipment       11.34       47.83.20       15.32.95.62       452,42,11.58       2,56.80       10.415.70       95.82.3       16.26.93       95.85.63       16.26.93       95.87.53       16.26.93       95.87.53       16.26.93       95.87.53       16.26.93       95.87.53       16.26.93       95.87.53       16.26.93       95.87.53       95.97.63       95.87.53       95.97.76       16.16.99.83       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76       95.97.76 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>500</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td></td> <td>150,504.0</td>										500	-	-	-	-	-	-		150,504.0
Paving Machine       Diesel       175       0.59       0.76673       1.85067       542.25       0.0305       0.176842       0.19687       0.38243167       Paving Machine       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       <				600	0.59			0.444220721										
Pickup Truck         Diesel         600         0.59         0.26379         0.82479         0.03267         0.03267         0.03227         0.14320         0.144220721         Pickup Truck         31,84         3,006,602.65         9,309,264.79         6,054,274,565.65         30,293.79         386,714.82         355,777.64         1,616,309.83         5,013,890.9           Pile Driver         Diesel         175         0.43         0.99502         3.5175         0.00362         0.20327         0.21325         0.44717869         0.4420721         0.44320721         0.44320721         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44717869         0.44703785         0.4403785         0.4403785         0.4403785         0.4403785         0.4403785         0.4403785         0.4403785         0.44038         0.44928         0.44928         0.44928         0.44928         0.44928         0.44928         0.44928         0.44928         0.44928         0.44928         0.44918         0.4										11,334	417,893.20	1,532,936.82	452,424,711.58	2,566.80	104,157.10	95,824.53	162,669.81	259,656.01
Pile Driver       Diesel       175       0.43       0.99502       3.5715       530.0963       0.03227       0.2194       0.20253       0.31233       0.447178698         Pressure Washer       Diesel       15       0.43       3.668738       5.51298       587.897       0.00395       0.4470       0.447178698         Pruning Saw/Chain Saw       Diesel       11       0.7       293.55       1.32293       685.996       0.14019       9.74818       29.06708923         Pruning Saw/Chain Saw       Diesel       11       0.7       29.355       1.32293       685.996       0.44718       29.06708923         Pumps       Diesel       11       0.7       29.355       1.32293       685.95       0.03965       0.496585       Pumps       275       5.807.82       6.123.97       755,313.91       5.16       582.26       535.68       861.03       24.28         Roller       Diesel       10       9.47618       0.03956       0.44718       8.0483       0.196557       0.25868307       Roller       3.67251.88       371,741.73       126.603,919.19       699.57       47,826.52       44,000.40       41,358.45       55,057.01         Rubber Tired Loader       Diesel       15       0.6388       1	-									21 22/	-	- 9 309 264 79	- 6 054 274 565 86	- 30 202 07	- 386 714 82	- 355 777 61	- 1 616 309 83	5 013 890 9
Pressure Washer       Diese       25       0.43       0.68738       5.51289       5.51289       6.7480       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805       0.44805	-								. locup muck	51,004	3,000,002.30	5,505,204.75	0,007,277,303.00	30,233.37	330,7 14.02	555,777.04	1,010,303.03	5,015,050.5
Pumps         Diesel         1         0.43         4.464978         4.70803         588.363         0.03966         0.44761         0.41821         0.66192         0.018665835         Pumps         275         5,807.82         6,123.97         765,31.91         5.16         582.26         535.68         861.03         24.28           Roller         Diesel         100         0.59         1.727618         1.74739         50.567         0.03291         0.22498         0.2059         0.1965535         Roller         3,63         367,251.88         371,741.73         126,603,919.19         699.57         47,826.52         44,000.40         41,358.45         55,050.71           Rubber Tired Loader         Diesel         175         0.59         0.634868         1.47993         0.1496         0.149653         Rubber Tired Loader         713         46,737.22         108,947.51         39,480,523.39         218.41         11,002.06         10,21.89         30,26.82         53,637.85         53,621.55           Scraper         Diesel         600         0.59         0.7581         0.1485621         Scraper         1,21266021         Scraper         1,311         24,913,650.47         1,390.72         24,981,850.47         1,390.72         24,986.86         25,975.55	Pressure Washer		Diesel	25	0.43	3.068738 5.512989 587.8975 0.003963	0.478805 0.4405 0.81579	0.040337855										
Roller         Diesel         100         0.59         1.727618         1.748739         595.5673         0.003291         0.224984         0.205968307         Roller         3,603         367,251.88         371,741.73         126,603,919.19         699.57         47,826.52         44,000.40         41,358.45         55,050.71           Rubber Tired Loader         Diesel         175         0.59         0.634868         1.47918         536.295         0.02906         0.14949         0.137493         0.17653         Rubber Tired Loader         713         46,737.22         108,947.51         39,480,523.39         218.14         11,002.06         10,121.89         13,026.82           Scraper         Diesel         600         0.59         0.7052         1.719861         56.3432         0.002997         0.107454         0.98858         0.160859         1.28266021         Scraper         1,311         327,279.26         798,177.15         248,913,650.47         1,390.72         49,868.86         45,879.35         74,653.56         523,621.55	-								Ruman	275	F 007 00	C 400 07	765 242 04	E 40	F02.20	F35 60	061.00	24.20
Rubber Tired Loader         Diesel         175         0.59         0.634868         1.479918         536.2945         0.002963         0.14949         0.137493         0.176953         Rubber Tired Loader         713         46,737.22         108,947.51         39,480,523.39         218.14         11,002.06         10,121.89         13,026.82           Scraper         Diesel         600         0.59         0.7052         1.719861         536.3432         0.002997         0.107454         0.098858         0.160859         1.128266021         Scraper         1,311         327,279.26         798,177.15         248,913,650.47         1,390.72         49,868.86         45,879.35         74,653.56         523,621.5									-									
Scraper Diesel 600 0.59 0.7052 1.719861 536.3432 0.002997 0.107454 0.098858 0.160859 1.128266021 Scraper 1,311 327,279.26 798,177.15 248,913,650.47 1,390.72 49,868.86 45,879.35 74,653.56 523,621.5																		
Seed Truck Spreader Diesel 600 0.59 0.266379 0.824782 536.3966 0.002684 0.034262 0.031521 0.143202 0.444220721	•							1.128266021	Scraper	1,311	327,279.26	798,177.15		1,390.72			74,653.56	523,621.5
	Seed Truck Spreader		Diesel	600	0.59	0.266379 0.824782 536.3966 0.002684	0.034262 0.031521 0.143202	0.444220721										

														со	VOC	NOx	Sox	PM10	PM2.5	CO2
													_							
													24.10	49.01	28,323.48	0.14	3.14	2.89	8.95	18.37
													21,861,904.8	44,460,465.5	25,694,636,438.68	130,567.84	2,848,071.76	2,620,226.02	8,119,056.80	16,660,641.5
Water Truck	Diesel	600	0.59	0.26637	0.824782 536	.3966 0.002	2684 0.034	0.031521	0.143202	0.444220721	Water Truck	12,960	1,222,104.09	3,783,969.13	2,460,901,968.81	12,313.69	157,189.31	144,614.17	656,987.06	2,038,013.59
Vibratory Compactor	Diesel	6	0.43	4.45404		.4781 0.003		0.377086		0.009376841	Vibratory Compactor	1,530	17,581.88	17,786.15	2,322,958.54	15.66	1,617.94	1,488.51	2,463.60	37.01
Truck Tower (Mantiwoc type)	Diesel	300	0.43	0.31655	1.43159 530	.5368 0.002	2879 0.063	0.058495	0.16695	0.464551326			-	0	0	0	0	0	0	0
Truck for Topsoil & Seed Del&Spread	Diesel	600	0.59	0.26637	0.824782 536	.3966 0.002	2684 0.034	0.031521	0.143202	0.444220721	Truck for Topsoil & Seed Del&Spread	41	3,866.22	11,970.89	7,785,260.86	38.96	497.28	457.50	2,078.43	
Trowel Machine	Diesel	600	0.59	1.17056	2.737276 536	.2078 0.003	3164 0.166	506 0.153185	0.205546	1.464577623	Trowel Machine	432	179,012.55	418,606.12	82,001,182.13	483.83	25,463.42	23,426.34	31,433.74	223,974.9
Trenchers	Diesel	75	0.59	1.96448				0.210627		0.176592476	Trencher	319	27,730.24	49,369.30	8,404,526.21	49.33	3,231.69	2,973.15	3,523.48	
Tractors/Loader/Backhoe	Diesel	100	0.21	4.55714		3.784 0.004				0.89787357	Tractors/Loader/Backhoe	18,696	1,789,208.98	1,423,347.57	272,390,683.21	1,632.72	254,877.99	234,487.75	287,021.07	352,519.53
Tractor Trailers Temp Fac.	Diesel	600	0.59	0.26637				262 0.031521		0.444220721	Tractor Trailer- Equipment Delivery		-	-	-	-	-	-	-	-
Tractor Trailer-Steel Deliveries	Diesel	600	0.59	0.19639				0873 0.019203			31 Tractor Trailer-Steel Deliveries		-	-	-	-	-	-	-	0
Tractor Trailer-Material Delivery	Diesel	600	0.59	0.19639	8 0.53011 53	6.4036 0.0	0263 0.020	0873 0.019203	0.14091		31 Tractor Trailer-Material Delivery		-	-	-	-	-	-	-	0
Tractor	Diesel	100	0.21	4.55714	3.625292 69	3.784 0.004	4159 0.649	0.597245	0.731048	0.89787357	Tractor		-	-	-	-	-	-	-	
Tower Crane	Diesel	300	0.43	0.31655	1.43159 530	.5368 0.002	2879 0.063	0.058495	0.16695	0.464551326										
Tool Truck	Diesel	600	0.59	0.26637	0.824782 536	.3966 0.002	2684 0.034	0.031521	0.143202	0.444220721	Tool Truck	12,136	1,144,402.41	3,543,383.4	2,304,437,214.00	11,530.79	147,195.18	135,419.56	615,215.66	1,908,436
Ten Wheelers	Diesel	600	0.59	0.26637	0.824782 536	.3966 0.002	2684 0.034	262 0.031521	0.143202	0.444220721	Ten Wheelers	60	5,657.89	17,518.38	11,393,064.67	57.01	727.73	669.51	3,041.61	
Sweepers	Diesel	175	0.43	0.34380	1.201601 530	.5518 0.002	2842 0.081	0.075253	0.162001	0.237064319										
Survey Crew Trucks	Diesel	600	0.59	0.26637	0.824782 536	.3966 0.002	2684 0.034	262 0.031521	0.143202	0.444220721	Survey Crew Trucks	168	15,842.09	49,051.45	31,900,581.08	159.62	2,037.64	1,874.63	8,516.50	26,418.69
Surfacing Equipment (Grooving)	Diesel	25	0.59	2.39530	4.457987 594	.7242 0.004	4009 0.352	.324694	0.472896	0.007705337	Surfacing Equipment (Grooving)	846	29,889.86	55,628.99	7,421,265.86	50.03	4,404.02	4,051.70	5,901.03	96.15
Stripping Machine & Truck	Diesel	600	0.59	1.17056	2.737276 536	.2078 0.003	3164 0.166	506 0.153185	0.205546	1.464577623										
Small Dozer	Diesel	175	0.59	0.49229	1.155007 53	5.339 0.002	2852 0.111	014 0.102133	0.162233	0.283774593	Small Dozer		-	-	-	-	-	-	-	
Slip Form Paver	Diesel	175	0.	59 0.50894	9 1.176264 5	36.329 0.00	02866 0.11	1466 0.105488	0.165514	0.2497503	36									
Skid Steer Loader	Diesel	75	0.21	4.90249	4.976789 69	3.044 0.004	4298 0.731	667 0.673133	0.975305	0.568134479	Skid Steer Loader	1,722	132,962.95	134,977.98	18,796,391.64	116.56	19,843.90	18,256.39	26,451.72	15,408.66
Set With Fork-Truck	Diesel	100	0.59	0.50971	0.485604 595	.7285 0.00	0.029 0.029	0.027203	0.141349	0.029746696	Set With Fork-Truck		-	-	-	-	-	-	-	

	со	VOC	NOx	Sox	PM10	PM2.5	CO2
Nonroad	24.09861808	8.949725582	49.00925999	0.143926362	3.139460813	2.888303948	28323.48026
Onroad	4.705265581	2.455783861	0.378097514	0.180407468	0.047101382	0.23222356	6344.009369
Fugitive	1.05975	0.0414475	0.0661885	0.01217	4.962884904	3.842755675	
Tot.	29.86	11.45	49.45	0.34	8.15	6.96	34667.49

<u>APPENDIX H</u> FARMLANDS

From:	Bednarek, Richard - NRCS, Des Moines, IA
То:	Barrow, Julie
Cc:	Bryan Belt (BMBelt@dsmairport.com); Full, David
Subject:	RE: Des Moines International Airport Farmlands Coordination
Date:	Thursday, November 29, 2018 12:51:08 PM
Attachments:	Letter to Bryan Belt.pdf
	440-V-CPM Subpart A General Information.pdf

Julie,

Attached is a letter for your FPPA request. You will not need to have an AD-1006 form completed because you are not permanently converting the land.

Please contact me if you have any questions or concerns.

Rick

Richard J. Bednarek, Jr. State Soil Scientist USDA-NRCS 210 Walnut Street, Room 693 Des Moines, IA 50309-2180

Office: 515-323-2238 Cell: 515-393-7949

From: Barrow, Julie <Julie.Barrow@rsandh.com>
Sent: Monday, November 19, 2018 1:59 PM
To: Bednarek, Richard - NRCS, Des Moines, IA <Rick.Bednarek@ia.usda.gov>
Cc: Bryan Belt (BMBelt@dsmairport.com) <BMBelt@dsmairport.com>; Full, David
<David.Full@rsandh.com>
Subject: Des Moines International Airport Farmlands Coordination

Hello Mr. Bednarek,

I am emailing on behalf of Bryan Belt, Director of Engineering and Planning the Des Moines International Airport who is undertaking an Airport project that will temporarily affect farmlands. Bryan is working closely with the Federal Aviation Administration (FAA) for this project.

Please see the attached coordination letter and supporting documentation, including the Form AD-1006 for the project.

A hard copy of the attached letter and supporting documentation will follow in the mail.

Please do not hesitate to contact me should you have any questions.

Thank you and we look forward to hearing from you. Julie

## Julie Barrow

Environmental Specialist 7800 E Union Ave, Suite 700, Denver, CO 80237 O 303-409-7940 | M 408-858-4913 julie.barrow@rsandh.com rsandh.com | Facebook | Twitter | LinkedIn | Blog

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## **United States Department of Agriculture**

Natural Resources Conservation Service 531 South 291h Street Fort Dodge, Iowa 50501

Subject: Farmland Conversion Impact Rating

Date: November 28, 2018

To: Bryan Belt

Director of Engineering and Planning Des Moines Airport Authority

The proposed project for the Des Moines International Airport Replacement Terminal and Enabling Projects Environmental Assessment has identified that there are soils identified as Prime Farmland and Farmland of Statewide Importance. In your letter, you state "The proposed construction borrow site is currently being used for hay and row crops and would be returned to cropland after completion of the Proposed Action." This project does not meet the purpose of the Farmland Protection Policy Act (FPPA) because it will not contribute to the unnecessary and irreversible conversion of important farmland to nonagricultural uses (as highlighted on the attached page). A Farmland Conversion Impact Rating will not be necessary for this project.

Please call or email me if you have any questions or concerns.

into Boder

Richard J. Bednarek, Jr. USDA-NRCS State Soil Scientist Des Moines, IA

515-323-2238

3-

## 523.1 General

#### A. Purpose

The purpose of the Farmland Protection Policy Act (FPPA) is to:

- (1) Minimize the extent to which Federal programs, including technical assistance or financial assistance, contribute to the unnecessary and irreversible conversion of important farmlandto nonagricultural uses;
- (2) Encourage alternative actions, if appropriate, that could lessen the adverse effects on farmland; and
- (3) Assure that Federal programs are operated in a manner that, to the extent practicable, will be compatible with State, local government, and private programs that protect farmland.

#### 8. Source of Authority

- (1) Law
  - (i) The Farmland Protection Policy Act of 1981 (Public Law 97-98, December 22, 1981)
  - (ii) Final rules published in the Federal Register on June 17, 1994.

#### (2) Regulation

- (i) Farmland Protection Policy Act of 1981 (Public Law 97-98, December 22, 1981)
- (ii) <u>Farmland Protection Policy Act. U.S. Code Title 7 Part 658, July 5, 1984 (7CFR658) (Amended June 6, 1994)</u>
- (iii) Prime and Unique Farmlands. U.S. Code Title 7 Part 657, January 31, 1978 (7CFR657) (Revised January 1, 2001)
- (iv) Departmental Regulations 9500-3. March 22. 1983
- (v) National Land Evaluation and Site Assessment (LESA) Handbook, January 2012

#### C. Scope

FPPA applies only to Federal assistance and actions that would convert important farmland to nonagricultural uses. It does not authorize the Federal government in any way to regulate the use of private or nonfederal land or in any way affect the private property rights of owners of private land.

#### D. Program Availability

This program applies to all Federal or federally funded activities in the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, the Territory of Guam, the Territory of American Samoa, the Territory of the Virgin Islands, and any other territory or possession of the United States. Provisions of FPPA apply to programs that provide financial assistance as well as to programs that provide technical assistance.

## 523.2 Roles and Responsibilities

#### A. General

The Natural Resources Conservation Service (NRCS) is the agency responsible for ensuring that FPPA is implemented. It is the responsibility of other Federal agencies and entities receiving Federal funds to lessen the effects of conversion activities on farmland and to ensure that their programs or activities are compatible, to the extent practicable, with State, local, and private programs to protect farmland.

#### 8. General Role

Under FPPA, NRCS will provide technical assistance to Federal agencies, State and local governments, tribes, and nonprofit organizations which receive Federal funds or technical assistance. Examples of technical assistance include:

- Responding to requests for technical assistance in developing programs or policies that limit the conversion of productive farmland to nonagricultural uses;
- (2) Advising agencies when a change in law, regulation, administrative rule, or other type of policy may affect the agency's compliance with FPPA;
- (3) Providing site assessment criteria to governmental agencies and nonprofit organizations;
- (4) Developing important farmland maps; and



November 16, 2018

Rick Bednarek, State Soil Scientist U.S Department of Agriculture Natural Resources Conservation Service 210 Walnut Street, Room 693 Des Moines, IA 50309-2180 Email: <u>rick.bednarek@ia.usda.gov</u>

Dear Mr. Bednarek,

Please see the following information as part of the Des Moines International Airport Replacement Terminal and Enabling Projects Environmental Assessment (EA).

#### **General Information:**

Requesting Agency Name:	Des Moines Airport Authority
Point of Contact:	Bryan Belt, Director of Engineering and Planning
Address:	5800 Fleur Drive, Room 207
City:	Des Moines
State:	lowa
Zip Code:	50321
Phone Number:	(515) 256-5160

The Des Moines Airport Authority is preparing an EA for Federal Aviation Administration (FAA) approval for the terminal replacement and enabling projects (Proposed Action) at Des Moines International Airport (see **Appendix A**).

According to the Web Soil Survey, the Proposed Action will result in the conversion of approximately 163 acres of farmland on Airport property to be used as a construction borrow site during the duration of construction of the replacement terminal and enabling projects (see **Appendix B**). The proposed construction borrow site (Site A) is currently being used for hay and row crops (see **Appendix C**) and would be returned to cropland after completion of the Proposed Action. As a result, a Form AD-1006 has been completed to determine the significance rating for converting the farmland to the proposed construction borrow site (see **Appendix D**). A conversion rating of 55 was calculated for the Proposed Action.

The Des Moines Airport Authority respectfully requests the Iowa State Natural Resource Conservation Service (NRCS) to complete the attached U.S. Department of Agriculture Farmland Conversion Impact Rating form in accordance with the Farmland Protection Policy Act for the Proposed Action at Des Moines International Airport.

We look forward to working with you. If you have any comments, questions, or concerns regarding the Proposed Action or the attached Form AD-1006, please do not hesitate to contact me, either via email (<u>BMBelt@dsmairport.com</u>) or at (515) 256-5160. We would appreciate your response within 30 days if possible.

Sincerely,

Bryan Bet

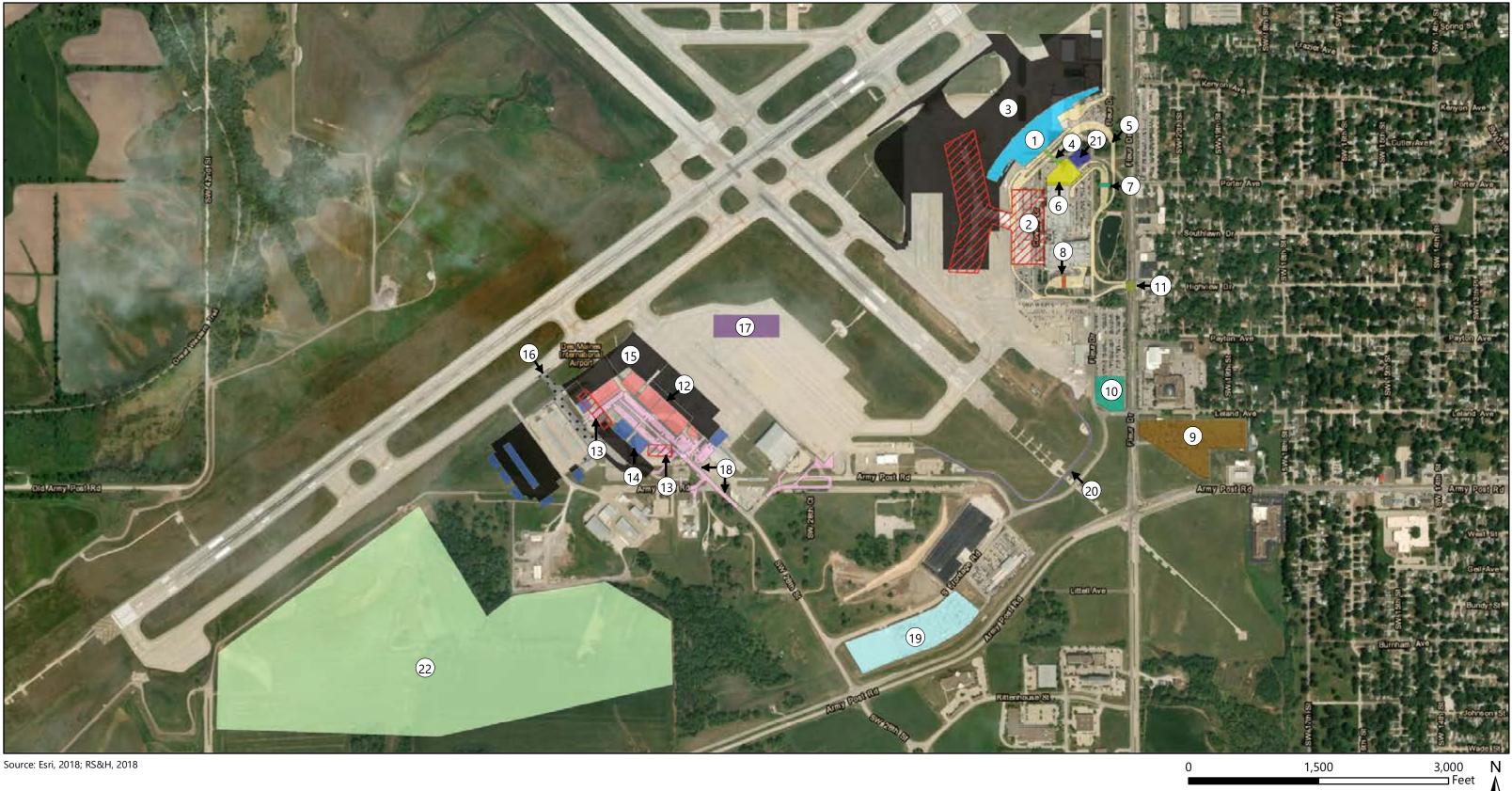
Bryan Belt Director of Engineering and Planning Des Moines Airport Authority Email: BMBelt@dsmairport.com Office: (515) 256-5160

Cc: Scott Tener, FAA – Central Region Airports Division Dave Full, RS&H

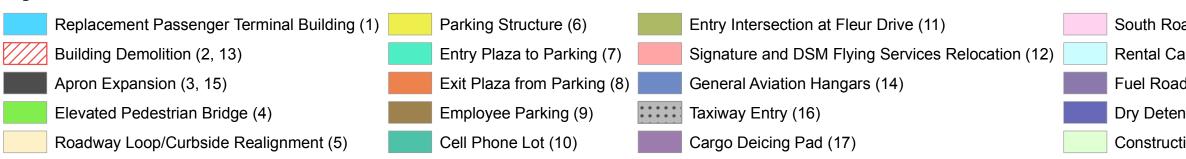
Appendices:

- A Proposed Action
- B Web Soil Survey
- C Site A
- D Form AD-1006

<u>APPENDIX A</u> PROPOSED ACTION



## Legend



- South Roadway and Parking Improvements (18)
- Rental Car Customer Service Building and Ready-Return Area (19)

 $\mathbb{A}$ 

- Fuel Road Improvements (20)
- Dry Detention Basin (21)
- Construction Borrow Area (22)

#### APPENDIX H

APPENDIX B WEB SOIL SURVEY



Soil Map—Polk County, Iowa (DSM EA) Γ

MAP INFORMATION	The soil surveys that comprise your AOI were mapped at 1:12,000.	Warning: Soil Map may not be valid at this scale.	Enlargement of maps beyond the scale of mapping can cause misunderstanding of the datail of magning and accuracy of soil	line placement. The maps do not show the small areas of	contrasting soils that could have been shown at a more detailed scale.		Please rely on the bar scale on each map sheet for map measurements.	Source of Map: Natural Resources Conservation Service	Web Soil Survey URL: Conrelinate System Web Mercator (FPSG:3857)	Maps from the Web Soil Survey are based on the Web Mercator	projection, which preserves direction and shape but distorts	distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more	accurate calculations of distance or area are required.	This product is generated from the USDA-NRCS certified data as	or une version date(s) haded befow. Soil Sunvay Area: Dolk County Lowa		Soil map units are labeled (as space allows) for map scales	1:50,000 or larger.	Date(s) aerial images were photographed: Data not available.	The orthophoto or other base map on which the soil lines were commiled and digitized probably differs from the background	comprised and ungreed productly unless home made in agreed on these maps. As a result, some minor	shifting of map unit boundaries may be evident.			
	Spoil Area Stony Spot	Very Stony Spot	Wet Spot	Other	Special Line Features	ures	Streams and Canals	ttion Rails	Interstate Highways	US Routes	Major Roads	, Local Roads	d	Aerial Photography											
EGEND.	₩ <	8	\$	$\triangleleft$	Ĭ,	Water Features	{	Transportation	ŧ Ì	1	8	8	Background	and											
MAP LI	Area of Interest (AOI) Area of Interest (AOI)		Soil Map Unit Polygons Soil Map Linit Lines	Soil Map Unit Points	Special Doint Features	Blowout	Borrow Pit	Clay Spot	Closed Depression	Gravel Pit	Gravelly Spot	Landfill	Lava Flow	Marsh or swamp	Mine or Quarry	Miscellaneous Water	Perennial Water	Rock Outcrop	Saline Spot	Sandy Spot	Severely Eroded Spot	Sinkhole	Slide or Slip	Sodic Spot	
	Area of In	Soils			Snorial	(0)		) ×	$\diamond$	ኤ	0 0 0	٥	$\prec$	-1	6<	0	0	>	+	°°°	Ŵ	0	A	Q	

10/19/2018 Page 2 of 3

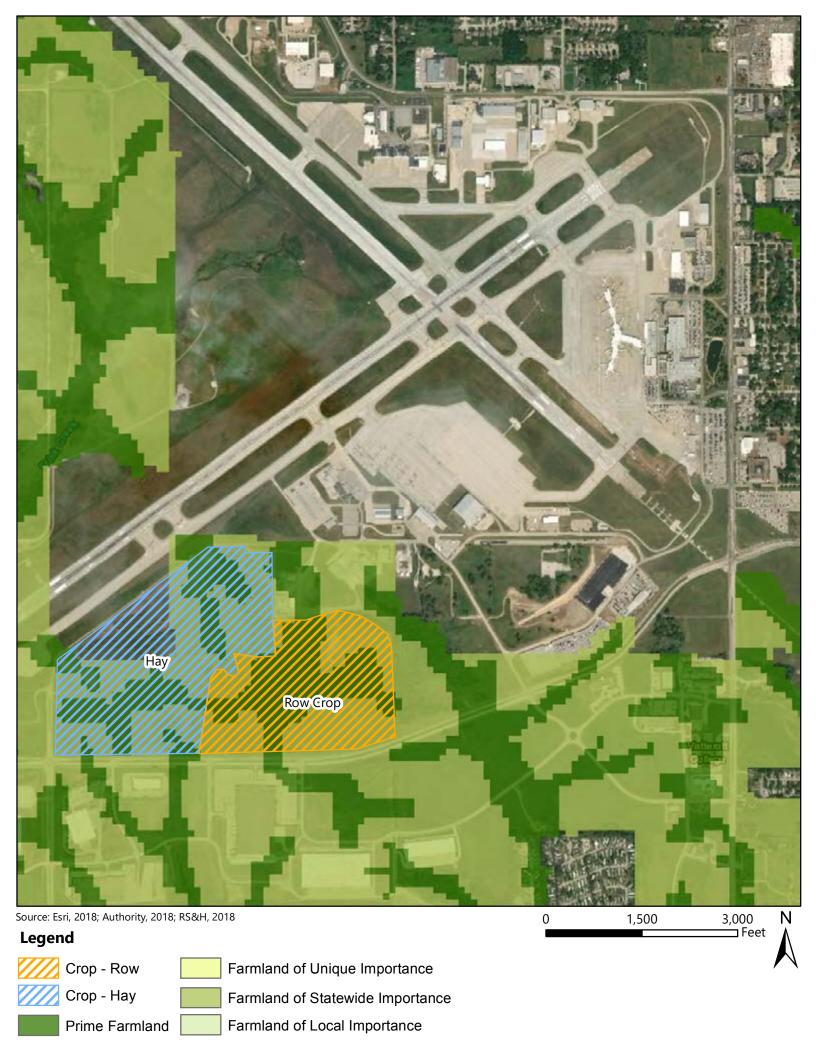
Web Soil Survey National Cooperative Soil Survey



# Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
11B	Colo-Judson silty clay loams, 0 to 5 percent slopes, occasionally flooded	15.9	9.7%
76C2	Ladoga silty clay loam, dissected till plain, 5 to 9 percent slopes, eroded	31.2	19.2%
76D2	Ladoga silty clay loam, 9 to 14 percent slopes, eroded	13.9	8.6%
370B	Sharpsburg silty clay loam, 2 to 5 percent slopes	46.1	28.3%
370C2	Sharpsburg silty clay loam, 5 to 9 percent slopes, eroded	30.3	18.6%
370D2	Sharpsburg silty clay loam, 9 to 14 percent slopes, eroded	10.9	6.7%
5040	Orthents, loamy	14.6	9.0%
Totals for Area of Interest	1	163.0	100.0%

<u>APPENDIX C</u> SITE A



APPENDIX D FORM AD-1006

F	U.S. Departmer	0								
PART I (To be completed by Federal Agend	cy)	Date Of	Land Evaluation	Request						
Name of Project		Federal	Agency Involved	 						
Proposed Land Use			and State							
PART II (To be completed by NRCS)		Date Ree	quest Received	Ву	Person Co	Person Completing Form:				
Does the site contain Prime, Unique, Statew (If no, the FPPA does not apply - do not cor	·	? `	YES NO	Acres I	rrigated	Average	Farm Size			
Major Crop(s)	Farmable Land In Govt. J Acres: %	lurisdictior	1	Amount of Farmland As Defined in FPPA Acres: %						
Name of Land Evaluation System Used	Name of State or Local S	ite Assess	ment System	stem Date Land Evaluation Returned by NRCS						
PART III (To be completed by Federal Age	ncy)			Oite A		Site Rating	0.4. D			
A. Total Acres To Be Converted Directly				Site A	Site B	Site C	Site D			
B. Total Acres To Be Converted Indirectly										
C. Total Acres In Site										
PART IV (To be completed by NRCS) Land	d Evaluation Information									
A. Total Acres Prime And Unique Farmland										
B. Total Acres Statewide Important or Local	Important Farmland									
C. Percentage Of Farmland in County Or Lo	cal Govt. Unit To Be Converted									
D. Percentage Of Farmland in Govt. Jurisdie	ction With Same Or Higher Relativ	ve Value								
<b>PART V</b> (To be completed by NRCS) Land Relative Value of Farmland To Be Co		3)								
<b>PART VI</b> (To be completed by Federal Age (Criteria are explained in 7 CFR 658.5 b. For		CPA-106)	Maximum Points	Site A	Site B	Site C	Site D			
1. Area In Non-urban Use			(15)				-			
2. Perimeter In Non-urban Use			(10)							
3. Percent Of Site Being Farmed			(20)							
4. Protection Provided By State and Local (	Government		(15)							
5. Distance From Urban Built-up Area			(15)							
6. Distance To Urban Support Services	•		(10)				_			
7. Size Of Present Farm Unit Compared To	Average		(10)				_			
8. Creation Of Non-farmable Farmland			(10)				<u> </u>			
9. Availability Of Farm Support Services			(20)							
10. On-Farm Investments	Convisoo		(10)							
11. Effects Of Conversion On Farm Support			(10)				-			
12. Compatibility With Existing Agricultural U TOTAL SITE ASSESSMENT POINTS	556		160				-			
PART VII (To be completed by Federal A	ronoul									
Relative Value Of Farmland (From Part V)	gency		100							
Total Site Assessment (From Part VI above	or local site assessment)		160				-			
TOTAL POINTS (Total of above 2 lines)			260							
Site Selected:	Date Of Selection				al Site Asses:	sment Used?	<u> </u>			
Reason For Selection:				l						

### STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

- Step 1 Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, <a href="http://fppa.nrcs.usda.gov/lesa/">http://fppa.nrcs.usda.gov/lesa/</a>.
- Step 2 Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s) of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at <a href="http://offices.usda.gov/scripts/ndISAPI.dll/oip\_public/USA\_map">http://offices.usda.gov/scripts/ndISAPI.dll/oip\_public/USA\_map</a>, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)
- Step 3 NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.
- Step 4 For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.
- Step 5 NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.
- Step 6 The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.
- Step 7 The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

#### INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM (For Federal Agency)

**Part I**: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

- 1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
- 2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.
- Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).
- 1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.
- 2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

**Part VII:** In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160. Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

 $\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$ 

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

<u>APPENDIX I</u>

NOISE

1

Federal Aviation Administration

Office of Environment and Energy http://www.faa.gov/about/office org/headquarters offices/apl/research/models/aem model/

#### Area Equivalent Method (AEM) Version 2c SP2

Airport Name/Code: DSM

			Descent
			Percent
	Baseline Area	Alternative	Change in
DNL (dBA)	(Sq. Mi.)	Area (Sq. Mi.)	Area
65	2.4	2.4	0.2%

	No Acti	on 2032	Proposed Action 2032					
Aircraft	Daytime	Nighttime	Daytime	Nighttime				
Туре	LTO Cycles	LTO Cycles	LTO Cycles	LTO Cycles				
707	210 0 0000	210 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	210 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	210 0 00000				
720								
737								
7478								
707120								
707320								
717200	3.67	0.34	3.67	0.34				
727100	0.07	0.04	0.07	0.04				
727200								
737300	1.32	0.12	1.32	0.12				
737400		0.12		02				
737500								
737700	3.45	0.32	3.45	0.32				
737800	1.25	0.12	1.25	0.12				
747100								
747200								
747400								
757300								
767300								
767400								
777200								
777300								
<u>1900D</u>								
<u>707QN</u>								
<u>720B</u>								
727D15								
<u>727D17</u>								
<u>727EM1</u>								
727EM2								
<u>727Q15</u>								
<u>727Q7</u>								
<u>727Q9</u>								
<u>727QF</u>								
<u>7373B2</u>								
<u>737D17</u>								
737N17								
737N9								
737QN								
74710Q								
74720A								
74720B								
747SP								
757PW								
757RR 767CF6								
767CF6 767JT9								
7773ER								
7878R								
<u>A10A</u>								
<u>A10A</u>								
<u>A300-622R</u>								
A300B4-203								
AJUUD4-203								

	No Acti	on 2032	Proposed Action 2032				
Aircraft	Daytime	Nighttime	Daytime	Nighttime			
Туре	LTO Cycles	LTO Cycles	LTO Cycles	LTO Cycles			
A310-304	,		,				
A319-131	7.27	0.68	7.27	0.68			
A320-211	2.35	0.22	2.35	0.22			
A320-232	2.00	0.22	2.00	0.22			
A321-232							
A330-301							
A330-343							
A340-211							
A340-642							
A37							
A380-841							
A380-861							
A4C							
A6A							
<u>A7D</u>							
<u>A7E</u>							
<u>B1</u>							
<u>B2A</u>							
B52BDE							
<u>B52G</u>							
<u>B52H</u>							
<u>B57E</u>							
BAC111							
BAE146							
BAE300	0.70	4.40	4.00	4.00			
BEC58P	3.76	1.43	4.29	1.63			
<u>C118</u>							
<u>C12</u> C130							
C130AD							
<u>C130E</u>							
C-130E							
C130HP							
C131B							
C135A							
C135B							
C137							
<u>C140</u>							
<u>C141A</u>							
<u>C17</u>	0.42	0.02	0.42	0.02			
<u>C18A</u>							
<u>C-20</u>							
<u>C21A</u>							
<u>C22</u>							
<u>C23</u>							
<u>C5A</u> C7A							
<u>C7A</u> <u>C9A</u>							
<u>CIT3</u>							
CL600	8.88	0.83	8.88	0.83			
CL601	0.00	0.00	0.00	0.00			
CNA172							
CNA182							
CNA182FLT							
CNA206							
CNA208							
CNA20T							
<u>CNA441</u>	6.99	2.65	7.87	2.98			
<u>CNA500</u>	1.95	0.74	1.99	0.75			
<u>CNA510</u>							
CNA525C							
CNA55B							
CNA560E							
CNA560U							
CNA560XL							
<u>CNA680</u> CNA750							
COMJET							
CONCRD							
CRJ9-ER	20.48	1.90	20.48	1.90			
CITO LIT							

	No Acti	on 2032	Proposed Action 2032					
Aircraft	Daytime	Nighttime	Daytime	Nighttime				
Туре	LTO Cycles	LTO Cycles	LTO Cycles	LTO Cycles				
CRJ9-LR	210 0 0000	210 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	210 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	210 0 0000				
CVR580								
DC1010								
DC1030								
DC1040								
DC1040								
DC6								
DC820								
DC850								
DC860								
DC870								
DC8QN								
DC910								
<u>DC930</u>								
DC93LW								
<u>DC950</u>								
DC95HW								
<u>DC9Q7</u>								
<u>DC9Q9</u>								
DHC-2FLT								
DHC6	0.85	0.32	0.85	0.32				
DHC6QP								
DHC7								
DHC8								
DHC830								
<u>DO228</u>								
DO328								
E3A								
<u>E4</u>								
EA6B								
ECLIPSE500								
EMB120								
EMB145	9.84	0.91	9.84	0.91				
EMB14L								
EMB170	1.76	0.16	1.76	0.16				
EMB175	8.08	0.75	8.08	0.75				
EMB190								
EMB195								
F10062								
F10065								
F100D								
F101B								
F102								
F104G								
F105D								
<u>F106</u>								
<u>F111AE</u>								
<u>F111D</u>								
<u>F-111F</u>								
<u>F117A</u>								
<u>F14A</u>								
<u>F15A</u>								
F15E20								
F15E29								
<u>F16A</u>								
<u>F16GE</u>	1.94	0.10	1.94	0.10				
<u>F16PW0</u>								
<u>F-18</u>								
F28MK2								
F28MK4								
<u>F4C</u>								
F-4C								
F5AB								
F5E								
<u>F8</u>								
FAL20								
FB111A								
GASEPF	8.59	3.26	9.82	3.72				
GASEPV	8.59	3.26	9.82	3.72				
GII								
GIIB								

# Federal Aviation Administration Office of Environment and Energy

	No Action 2032		Proposed Action 2032	
Aircraft	Daytime	Nighttime	Daytime	Nighttime
Туре	LTO Cycles	LTO Cycles	LTO Cycles	LTO Cycles
GIV				
GV				
HS748A				
IA1125				
JAGUAR				
<u>KC10A</u>				
<u>KC135</u>	0.42	0.02	0.42	0.02
<u>KC-135</u>				
KC135B				
KC135R				
<u>L1011</u> L10115				
<u>L188</u> LEAR25				
LEAR25	1.70	0.65	1.70	0.65
MD11GE	1.70	0.00	1.70	0.00
MD11PW				
MD81				
MD82				
MD83	5.07	0.47	5.07	0.47
MD9025				
MD9028				
<u>MU3001</u>				
<u>OV10A</u>				
<u>P3A</u>				
<u>PA28</u>				
PA30				
PA31	-			
PA42 S3A&B				
SABR80				
<u>SD330</u>				
SF340				
<u>SR71</u>				
T1				
T29				
T-2C				
<u>T3</u>				
<u>T33A</u>				
<u>T34</u>				
<u>T37B</u>				
<u>T-38A</u>				
<u>T39A</u>				
<u>T41</u>				
<u>T42</u>				
<u>T-43A</u>				
T44 TORNAD				
TR1				
U2				
<u>U21</u>				
U6				
U8F				
Total LTOs	108.63	19.27	112.54	20.73

4

<u>APPENDIX J</u>

AGENCY AND PUBLIC INVOLVEMENT

## J.1 AGENCY SCOPING MEETING

The following pages include:

- » Notice of Agency Scoping Meeting
- » Agency Scoping Meeting Sign-in Sheet
- » Agency Scoping Meeting Presentation
- » Agency Comment Letters to Scoping The Authority did not receive any agency comment letters during scoping.



## Notice of Agency Scoping Meeting Des Moines International Airport Replacement Passenger Terminal and Enabling Projects Environmental Assessment Des Moines, Iowa

The City of Des Moines, through the Des Moines Airport Authority (Authority) and in coordination with the Federal Aviation Administration (FAA), intends to undertake the following Proposed Action (see Exhibit 1) at the Des Moines International Airport (Airport):

- » Project 1: Construction of a Replacement Passenger Terminal Building
- » Project 2: Demolition of the Existing Passenger Terminal Building
- Project 3: Construction of a Terminal Apron with New Deicing Pad, Remain Overnight (RON) Pad, and Relocation of the Storm Control Building
- » Project 4: Construction of an Elevated Pedestrian Bridge
- » Project 5: Construction of a Temporary Loading Dock
- » Project 6: Realignment of the Roadway Loop/Curbside
- » Project 7: Construction of a New Parking Structure
- » Project 8: Construction of a New Entry Plaza to Parking
- » Project 9: Construction of a New Exit Plaza from Existing Parking
- » Project 10: Relocation of the Employee Parking
- » Project 11: Relocation of the Cell Phone Lot
- » Project 12: Construction of a New Entry Intersection at Fleur Drive
- » Project 13: Relocation of Signature and DSM Flying Services
- » Project 14: Relocation of Building 33
- » Project 15: Demolition of Buildings 34/35
- » Project 16: Relocation of Cargo Activities
- » Project 17: Expansion of the South Apron
- » Project 18: Construction of a New Taxiway Entry
- » Project 19: Construction of a New Cargo Deicing Pad
- » Project 20: Improvements to South Roadways and Parking
- » Project 21: Construction of New Rental Car Customer Service Building and Rental Car Ready-Return Area

- » Project 22: Improvements to Fuel Road
- » Project 23: Construction of a New Dry Detention Basin

Draft Environmental Assessment (EA) will be prepared for this Proposed Action. The Draft EA will describe the Proposed Action and the impacts associated with the implementation of the Proposed Action. The Authority is holding an agency scoping meeting to provide representatives of federal, state, regional, and local agencies an opportunity to discuss the Proposed Action and provide input regarding the issues to be addressed in the Draft EA. Together with the public scoping meeting, these meetings will constitute the scoping process for the Draft EA. In the event that an environmental impact statement (EIS) is required by the FAA, these scoping meetings will serve as the scoping session for the EIS. The agency scoping meeting will be held at the following time and place:

Wednesday, August 15, 2018, 2:00 PM – 4:00 PM Airport Cloud Room, 2<sup>nd</sup> Floor of Terminal Building (Airport Skywalk Level), Room 227 Des Moines International Airport 5800 Fleur Drive Des Moines, IA 50321

Please park in short-term parking. Your parking ticket will be validated at the scoping meeting. Comments regarding the scope of the Draft EA must be postmarked by Friday, September 14, 2018, and sent to:

Des Moines Airport Authority Attn: Mr. Bryan Belt 5800 Fleur Drive, Suite 207 Des Moines, IA 50321

Comments may also be submitted via email to Bryan Belt (<u>bmbelt@dsmairport.com</u>) by Friday, September 14, 2018.



### Exhibit 1 Proposed Action

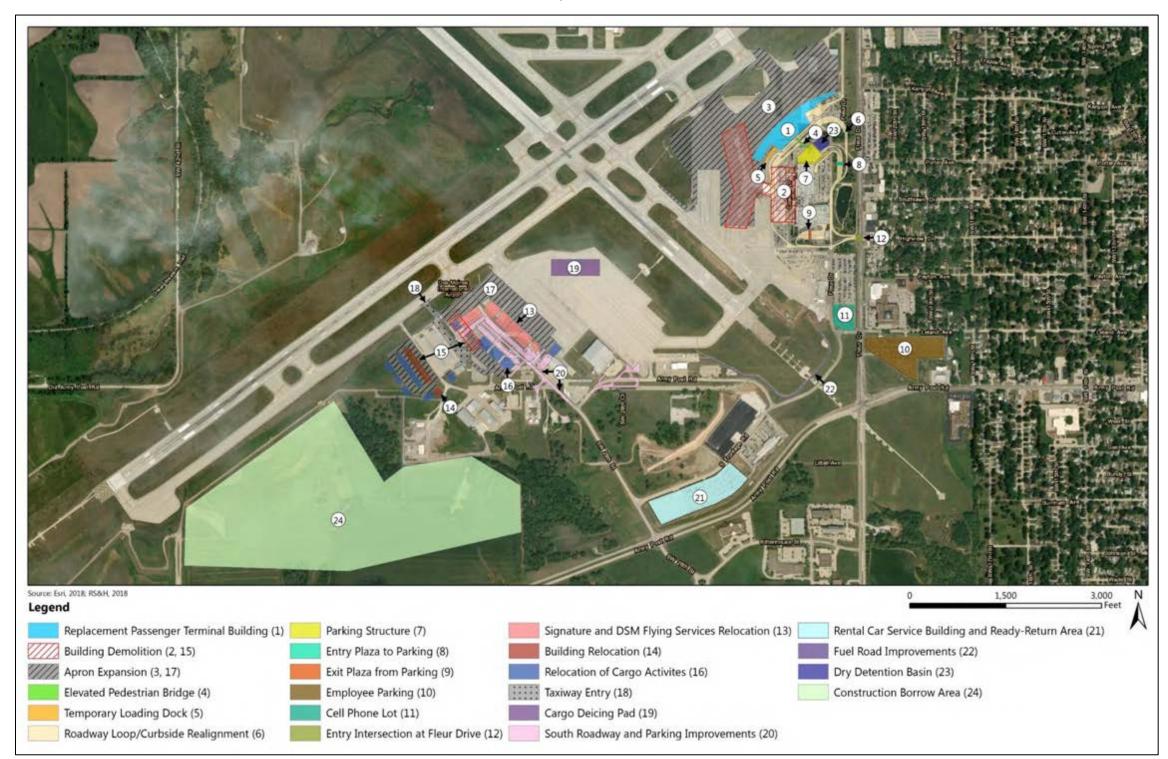


TABLE J-1 STATE AND FEDERAL REPRESENTATIVES CONTACTED

Title	Last Name	First Name	Geographical Representation	Email/Phone
Representative	Abdul-Samad	Ako	35th District	ako.abdul-samad@legis.iowa.gov
Senator	Allen	Chaz	15th District	chaz.allen@legis.iowa.gov
Representative	Anderson	Marti	36th District	marti.anderson@legis.iowa.gov
Representative	Bacon	Rob	48th District	rob.bacon@legis.iowa.gov
Representative	Baltimore	Chip	47th District	chip.baltimore@legis.iowa.gov
Iowa Senate - President Pro Tempore	Behn	Jerry	24th District	jerry.behn@legis.iowa.gov
Senator	Bisignano	Tony	17th District	tony.bisignano@legis.iowa.gov
U.S. Representative	Blum	Rod	1st District	Phone: 202-225-2911
Ambassador to China	Branstand	Terry	China	BeijingWebmaster@state.gov
Representative	Breckenridge	Wes	29th District	wes.breckenridge@legis.iowa.gov
Senator	Chapman	Jake	10th District	jake.chapman@legis.iowa.gov
Representative	Cownie	Peter	42nd District	peter.cownie@legis.iowa.gov
Representative	Deyoe	Dave	49th District	dave.deyoe@legis.iowa.gov
U.S. Senator	Ernst	Joni	Iowa	Phone: 202-224-3254
Representative	Forbes	John	40th District	john.forbes@legis.iowa.gov
Representative	Gaines	Ruth Ann	32nd District	ruthann.gaines@legis.iowa.gov
Senator	Garrett	Julian B.	13th District	julian.garrett@legis.iowa.gov
U.S. Senator	Grassley	Chuck	Iowa	Phone: 202-224-3744
Representative	Gustafson	Stan	25th District	stan.gustafson@legis.iowa.gov
Representative - Majority Leader of Iowa House	Hagenow	Chris	43rd District	chris.hagenow@legis.iowa.gov
Representative	Heddens	Lisa	46th District	lisa.heddens@legis.iowa.gov
Representative	Highfill	Jake	39th District	jake.highfill@legis.iowa.gov
Representative	Hunter	Bruce L.	34th District	bruce.hunter@legis.iowa.gov
U.S. Representative	King	Steve	4th District	Phone: 202-225-4426
Representative	Koester	Kevin	38th District	kevin.koester@legis.iowa.gov
Representative	Landon	John	37th District	john.landon@legis.iowa.gov
U.S. Representative	Loebsack	Dave	2nd District	Phone: 202-225-6576
Representative	Meyer	Brian	33rd District	brian.meyer@legis.iowa.gov
Representative	Nunn	Zach	30th District	zach.nunn@legis.iowa.gov
Representative	Oldson	Jo	41st District	jo.oldson@legis.iowa.gov
Representative	Olson	Rick	31st District	rick.olson@legis.iowa.gov
Representative	Ourth	Scott	26th District	scott.ourth@legis.iowa.gov
Representative	Paustian	Ross	92nd District	ross.paustian@legis.iowa.gov
Senator	Petersen	Janet	Des Moines	janet.peterson@legis.iowa.gov
Senator	Quirmbach	Herman C.	23rd District	herman.quirmbach@legis.iowa.gov
Governor	Reynolds	Kim	Iowa	Phone: 515-281-5211

#### TABLE J-1 CONTINUED STATE AND FEDERAL REPRESENTATIVES CONTACTED

Title	Last Name	First Name	Geographical Representation	Email/Phone
Senator / President Iowa Senate	Schneider	Charles	22nd District	charles.schneider@legis.iowa.gov
Iowa Senate - Majority Whip	Sinclair	Amy	14th District	amy.sinclair@legis.iowa.gov
Minority Leader of Iowa House	Smith	Mark	71st District	matt.smith@legis.iowa.gov
Representative	Taylor	Rob	44th District	rob.taylor@legis.iowa.gov
Iowa Speaker of the House	Upmeyer	Linda L.	54th District	linda.upmeyer@legis.iowa.gov
Representative	Watts	Ralph C.	19th District	ralph.watts@legis.iowa.gov
Representative	Wessel-Kroeschell	Beth	45th District	beth.wessel-kroeschell@legis.iowa.gov
Senator / Majority Leader of Iowa Senate	Whitver	Jack	19th District	jack.whitver@legis.iowa.gov
Iowa House - Speaker Pro Tempore	Windschitl	Matt W.	17th District	matt.windschitl@legis.iowa.gov
U.S. Representative	Young	David	3rd District	Phone: 202-225-5476
Senator	Zaun	Brad	20th District	brad.zaun@legis.iowa.gov

### TABLE J-2

### FEDERAL, STATE, AND LOCAL AGENCIES CONTACTED

Agency	Title	Last Name	First Name	Geographical Representation	Email/Phone
U.S. Fish and Wildlife Service	Chief, Endangered Species	Shull	Alisa	Midwest Region	Alisa Shull@fws.gov
U.S. Fish and Wildlife Service	Regional NWI and Remote Sensing Coordinator	Huberty	Brian	Midwest Region	Brian Huberty@fws.gov
U.S. Army Corps of Engineers	District Commander	Sattinger	Col. Steven	Rock Island District	cemvr-cc@usace.army.mil
U.S. EPA Water, Wetlands, and Pesticides Division	Director	Robichaud	Jeff	U.S. EPA Region 7	Robichaud.jeffery@epa.gov
U.S. EPA Air and Waste Management Division	Director	Weber	Rebecca	U.S. EPA Region 7	Weber.rebecca@epa.gov
U.S. Department of Agriculture	State Executive Director	De Jong	Amanda	Iowa	Amanda.DeJong@ia.usda.gov
Federal Aviation Administration	Engineer - Environmental	Tener	Scott	Central Region	scott.tener@faa.gov
Iowa Department of Natural Resources	Water Quality Bureau Chief	Tack	Jon	Iowa	Jon.Tack@dnr.iowa.gov
Iowa Department of Natural Resources	Air Quality Bureau Chief	Fitzsimmons	Catharine	Iowa	Catharine.Fitzsimmons@dnr.iowa.gov
Iowa Department of Cultural Affairs	Deputy State Historic Preservation Officer	King	Steve	Iowa	Steve.King@iowa.gov
Iowa Department of Transportation Office of Aviation	Planning and Outreach Manager	McClung	Tim	Iowa	tim.mcclung@iowadot.us
Iowa Environmental Council	Executive Director	Terry	Jennifer	Iowa	terry@iaenvironment.org
City of Des Moines Community Development	Director	Delafield	Phil	Des Moines	pmdelafield@dmgov.org
City of Des Moines Engineering Dept.	City Traffic Engineer	МсСоу	Jennifer	Des Moines	JLBohac@dmgov.org
City of Des Moines Economic Development Dept.	Development Coordinator	Conner	Rita	Des Moines	raconner@dmgov.org
Des Moines Metropolitan Planning Organization	Executive Director	Ashby	Todd	Des Moines	tashby@dmampo.org
Des Moines Area Regional Transit Authority	Chief Executive Officer	Presutti	Elizabeth	Des Moines	epresutti@ridedart.com
Polk County Public Works	Planning and Development Services Manager	Vandelune	Bret	Polk County	Bret.Vandelune@polkcountyiowa.gov
Polk County Public Works	Polk County Engineer	Bailey	Kurt	Polk County	Kurt.Bailey@polkcountyiowa.gov
Polk County Public Works	Air Pollution Engineer	Becker	Jeremy	Polk County	Jeremy.Becker@polkcountyiowa.gov

### TABLE J-3 LOCAL ELECTED OFFICIALS CONTACTED

Title	Last Name	First Name	Geographical Representation	Email/Phone
Mayor	Andeweg	Robert	Urbandale	bandeweg@urbandale.org
Des Moines City Council Member	Boesen	Connie	At Large	connieboesen@dmgov.org
Mayor	Brand	Dean	Mitchelville	dean.brand@mitchellville.org
Polk County Board of Supervisors	Brownwell	Robert	District 1	countyboard@polkcountyiowa.gov
Mayor	Burgess	Dave	Windsor Heights	dburgess@windsorheights.org
Mayor	Cirksena	Scott	Clive	scirksena@cityofclive.com
Des Moines City Council Member	Coleman	Christopher	At Large	ccoleman@dmgov.org
Polk County Board of Supervisors	Connolly	Angela	District 2	countyboard@polkcountyiowa.gov
Mayor - Des Moines City Council Member	Cownie	Frank	Des Moines	fcownie@dmgov.org
Mayor	Dierenfeld	Paula	Johnston	PSD@nyemaster.com
Community & Economic Development Director	Dutcher	Dan	Waukee	ddutcher@waukee.org
City Clerk	Eddleman	Jodi	Norwalk	jeddleman@norwalk.iowa.gov
Mayor	Gaer	Steven	West Des Moines	steven.gaer@wdm-ia.com
Des Moines City Council Member	Gatto	Joe	Ward IV	joegatto@dmgov.org
City Clerk	Gibbons	Jenny	Polk City	jgibbons@polkcityia.gov
Des Moines City Council Member	Gray	Bill	Ward I	BillGray@dmgov.org
City Clerk	Herrold	Bradley	Hartford	hfordcty@netins.net
Polk County Board of Supervisors	Hockensmith	Tom	District 4	countyboard@polkcountyiowa.gov
City Clerk	Jacobson	Ryan	West Des Moines	ryan.jacobson@wdm.iowa.gov
Mayor	Kurovski	Sara	Pleasant Hill	skurovski@pleasanthilliowa.org
Mayor	Lorenz	Gary	Ankeny	glorenz@ankenyiowa.gov
Des Moines City Council Member	Mandelbaum	Josh	Ward III	joshmandelbaum@dmgov.org
Polk County Board of Supervisors	Mauro	John F	District 5	countyboard@polkcountyiowa.gov
City Clerk	Michel	Kyle	Elkhart	cityofelkhart@huxcomm.net
Mayor	Mikkelsen	Scott	Grimes	smikkelsen@grimesiowa.gov
Mayor	Morse	Jason	Polk City	jmorse@polkcityia.gov
City Manager	Nelson	Luke	Norwalk	Inelson@norwalk.iowa.gov
Mayor	O'Connor	Dean Raymond	Altoona	doconnor@altoona-iowa.com
Mayor	Peard	William	Waukee	mayorpeard@gmail.com
Mayor	Phillips	Tom	Norwalk	mayor@norwalk.iowa.gov
City Clerk	Rauh	Diane	Des Moines	CityClerk@dmgov.org
City Clerk	Reed	Rachelle	Pleasantville	cityhall@discoverpleasantville.com
Mayor	Sullivan	Curt	Bondurant	csullivan@cityofbondurant.com
City Clerk	Swisher	Rachelle	Cumming	cityclerk@cumming-iowa.com
Polk County Board of Supervisors	Van Oort	Steve	District 3	countyboard@polkcountyiowa.gov
Des Moines City Council Member	Westergaard	Linda	Ward II	LindaW@dmgov.org



Project: Des Moines International Airport Replacement Passenger Terminal and Enabling Projects Environmental Assessment

Meeting: Agency Scoping Meeting

August 15, 2018 Date:

Send the slides

	Attendee	Organization	Phone	Email Address
1	Luke NELSON!	City of NORWALK	515-493-9971	Inclosen Onorwalk, Iowa. gov
2	TODO ASHBN	CITY OF NORWALK DMAMPG	515-334-0675	tashbyedmanpoing
3				5 ( )
4				
5				
6				
7				
8				
9				
10				1
11				11
12				
13				
14				2
15				
16				
17				
18				
19				
20				



**Replacement Passenger Terminal and Enabling Projects Environmental Assessment** 

**Des Moines International Airport** 

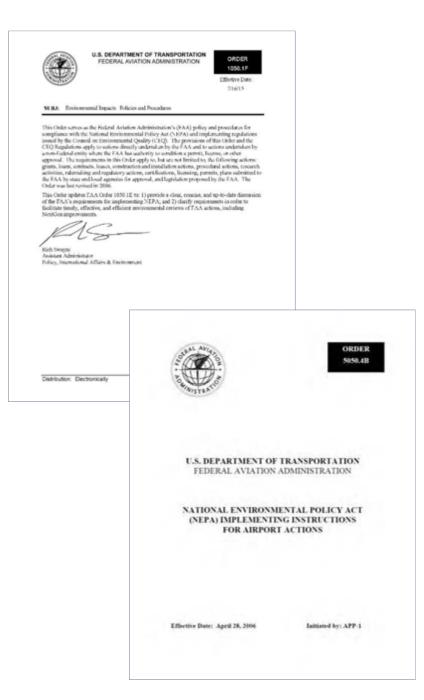
## **AGENCY SCOPING MEETING**

**WELCOME** 



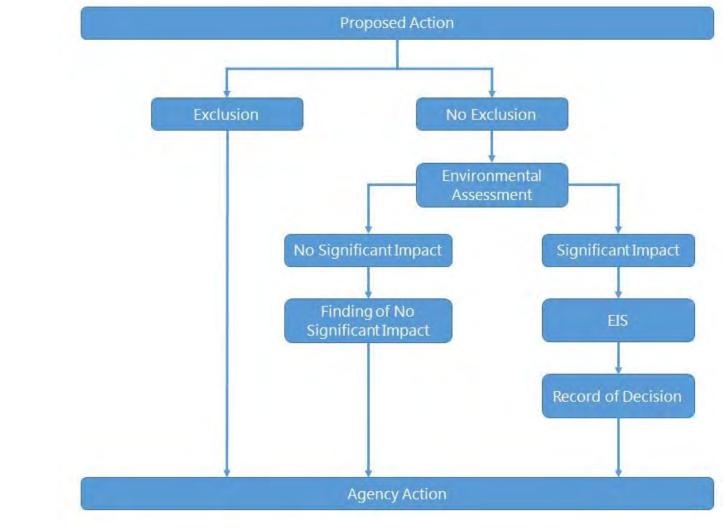
# What is NEPA?

- » NEPA is the National Environmental Policy Act of 1969.
- The Federal Aviation
   Administration (FAA) is the lead agency for aviation-related
   NEPA documentation.
- » All NEPA documentation follows guidance provided in Council on Environmental Quality (CEQ) Regulations and FAA Orders.





## The NEPA Process





# Scoping and its Benefit

- » Provides an opportunity for involvement in the EA process from the start
  - Federal, state, and local agencies and the public can provide information regarding environmental conditions and concerns
- » Information received during scoping helps identify areas of concern
  - Issues that arise during the scoping process can help identify areas deserving emphasis or de-emphasis in the EA









# Purpose and Need

- » The Purpose and Need describes the problem and proposed solution
- » Purpose
  - Better meet the needs of the traveling public
- » Need
  - Out-of-Date Infrastructure
    - Built in 1948 and undergone many renovations
    - Inefficient check-in, baggage screening, security, baggage claim, concessions, restrooms, and hold room areas
  - Increase in Number of Passengers
    - Number of passengers forecast to exceed current design capacity of the terminal, front curb, and parking garage structures
  - Separate cargo and commercial aircraft activities
    - Inefficient use of apron area within cargo ramp and with mixed FBO/GA and commercial aircraft activities



# **Proposed Action**

- » Replace the existing passenger terminal building and enabling projects (this includes 21 project components)
  - Project 1: Construction of a replacement passenger terminal building
  - Project 2: Demolition of the existing passenger terminal building
  - Project 3: Construction of a terminal apron with new deicing pad, remain overnight (RON) pad, and relocation of the storm control building
  - Project 4: Construction of an elevated pedestrian bridge

- Project 5: Realignment of the roadway loop/curbside
- Project 6: Construction of a new parking structure
- Project 7: Construction of a new entry plaza to parking
- Project 8: Construction of a new exit plaza from existing parking
- Project 9: Relocation of employee parking



## **Proposed Action (continued)**

- Replace the existing terminal building and enabling projects **>>** (this includes 21 project components)
  - Project 10: Relocation of the cell phone lot Project 16: Construction of a new taxiway entry
  - Project 11: Construction of a new entry intersection at Fleur Drive
  - Project 12: Relocation of Signature and DSM Project 18: Improvements to south roadways Flying Services
  - Project 13: Demolition of Buildings 34/35
  - Project 14: Construction of general aviation hangars
  - Project 15: Expansion of south apron

- Project 17: Construction of a new cargo deicing pad
- and parking
  - Project 19: Construction of new rental car customer service building and rental car readyreturn area
  - Project 20: Improvements to Fuel Road
  - Project 21: Construction of a new dry detention basin



## **Proposed Action**





# **NEPA Resource Categories**

- » Air Quality
- » Biological Resources
- » Climate
- » Coastal Resources
- » Department of Transportation Act, Section 4(f)
- » Farmlands
- » Hazardous Materials, Solid Waste, and Pollution Prevention

- » Historical, Architectural, Archaeological, and Cultural Resources
- » Land Use
- » Natural Resources and Energy Supply
- » Noise and Noise-Compatible Land Use
- » Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks
- » Visual Effects
- Water Resources (including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers)



## Next Steps

- » Determine study areas
- » Describe existing environmental conditions (affected environment)
- » Analyze potential environmental effects (environmental consequences)
  - Determine any mitigation, if necessary
  - Assess cumulative environmental effects
- » Publish Draft EA (scheduled for winter 2019)
  - Reviewed by public and federal, state, and local agencies
  - Address comments received
- » Publish Final EA
  - FAA issues finding



## How to Provide Scoping Comments

- » Fill out comment card this evening
- » Send written comments via U.S. mail (must be postmarked by Friday, September 14, 2018) to:

Mr. Bryan Belt Des Moines Airport Authority 5800 Fleur Drive, Suite 207 Des Moines, IA 50321

» Send written comments via email to <u>bmbelt@dsmairport.com</u> by Friday, September 14, 2018.



## J.2 PUBLIC SCOPING MEETING

The following pages include:

- » Notice of Public Scoping Open House
- » Public Scoping Open House Sign-in Sheet
- » Public Scoping Open House Poster Boards
- » Comment Form
- Public Comment Letters to Scoping The Authority did not receive any public comment letters during scoping.





DES MOINES INT'L AIRPORT AUTH 5800 FLEUR DR STE 207

**DES MOINES IA 503212800** 

## **AFFIDAVIT OF PUBLICATION**

#### State of Wisconsin

#### County of Brown, ss.:

The undersigned, being first duly sworn on oath, states that The Des Moines Register and Tribune Company, a corporation duly organized and existing under the laws of the State of Iowa, with its principal place of business in Des Moines, Iowa, the publisher of

### THE DES MOINES REGISTER

newspaper of general circulation printed and published in the City of Des Moines, Polk County, Iowa, and that an advertisement, a printed copy of which is attached as Exhibit "A" and made part of this affidavit, was printed and published in The Des Moines Register on the following dates:

Ad No.	Start Date:	Run Dates:	Cost:
0003045781	7/26/18	07/26/18	\$41.19

Copy of Advertisement Exhibit "A"

Klun Yang Staff member, Register Media

Subscribed and sworn to before me by said affiant this

26th day of July. 2018

Notary Public

TARA MONDLOCH Notary Public State of Wisconsin

Commission expires

Notice of Public Scoping Open House

## **Des Moines International Airport** Replacement Passenger Terminal and Enabling Projects Environmental Assessment

Environmental Assessment Des Moines, Iowa The City of Des Moines, through the Des Moines Airport Authority (Authority), and in coordination with the Federal Aviation Administration (FAA), intends to undertake a variety of project elements (collectively, the Proposed Action) at the Des Moines International Airport (Airport), including a replacement International including a replacement terminal building, of some existing (Airport), demolition of some existing buildings, new airfield pavements, realigned roadways new realigned roadways, new relocated parking facilities, relocated general aviation cargo facilities. or and and

relocated general aviation and cargo facilities. Pursuant to the requirements of the National Environmental Policy Act (NEPA) and FAA Order 1050.1F, a Draft Environmental Assessment (EA) will be prepared for this Proposed Action. The Draft EA will describe the Proposed Action and the impacts associated with the implementation of the Proposed Action. The Authority is holding a public scoping open house for the public to provide input regarding the issues to be addressed in the Draft EA. This public scoping open house will not describe the potential design of the replacement passenger terminal and enabling projects; but rather, the Draft EA will focus on the general characteristics of the Proposed Action and the environmental effects of Proposed Action and the environmental effects of implementation of the Proposed of

implementation of the Proposed Action. Together with a scoping meeting for regulatory agencies, these meetings will constitute the scoping process for the Draft EA. In the event that an Environmental Impact Statement (EIS) is required by the FAA, these scoping meetings will serve as the scoping session for the EIS. The public scoping open house will be held at the following time and place: place:

place: Wednesday, August 15, 2018, 5:00 PM - 8:00 PM CDT Airport Cloud Room, 2nd Floor of Terminal Building (Airport Skywalk Level), Room 227 Des Moines International Airport 5800 Fleur Drive Des Moines, IA 50321 Please park in hourly parking. Your parking ticket will be validated at the scoping meeting. Validated at the scoping meeting. Comments on the scope for the Draft EA must be postmarked by Friday, September 14, 2018, and sent to: Des Moines Airport Authority Attn: Mr. Bryan Belt 5800 Fleur Drive, Suite 207 Des Moines, IA 50321

Comments may also be submitted via email to Bryan Belt (bmbelt@dsmairport.com) by Belt by Friday, September 14, 2018.

### TABLE J-4 LOCAL BUSINESS LEADERS CONTACTED

Title	Last Name	First Name	Company	Email/Phone
Vice President	Adelman	David	Cornerstone Government Affairs	dadelman@cgagroup.com
Chairman	Albaugh	Dennis	Albaugh LLC	N/A
Publisher	Anderson	Scott	Ames Tribune	sanderson@amestrib.com
President & CEO	Andringa	Jason	Vermeer Corporation	jandringa@vermeer.com
Chairman & CEO	Baker III	B.J.	Baker Group	N/A
President/General Manager	Bernabe	Sam	Iowa Cubs	sbernabe@iowacubs.com
CEO	Brannen	James	FBL Financial Group, Inc.	N/A
CEO	Brown	C. Edward	The Iowa Clinic	info@iowaclinic.com
Attorney	Bunz	John	Ahlers & Cooney, P.C.	jbunz@ahlerslaw.com
Managing Director	Burmeister	Jon	PFM Financial Advisors LLC	burmeisterj@pfm.com
CEO	Byers	Jay	Greater Des Moines Partnership	info@DSMpartnership.com
Director of Corporate Real Estate	Carpenter	Ryan	Principal Financial Group	N/A
CEO	Clark	Jessica	GuideOne Insurance	jclark@guideone.com
President	Codina	Marta	Wells Fargo	N/A
President	Coffin	Don	Bankers Trust	dcoffin@bankerstrust.com
Executive Vice President	Collins	Jim	Corteva Agriscience, Agriculture Division of DowDuPont	N/A
General Manger	Connolly	Chris	Wells Fargo Arena - Iowa Events Center	Chris Connolly@comcastspectator.com
Vice President & Manager (DSM Commercial Real Estate)	Cooper	Jenny	Bankers Trust	jcooper@bankerstrust.com
Owner	Cownie	James	JSC Properties, Inc.	jscproperties@comcast.net
President	Denson	Robert	Des Moines Area Community College	<u>rjdenson@dmacc.edu</u>
Director	Durham	Debi	Iowa Economic Development Authority	director@iowaeda.com
Chairman & CEO	Edeker	Randy	Hy-Vee	N/A
President & CEO	Edwards	Greg	Greater Des Moines Convention & Visitors Bureau	greg@catchdesmoines.com
Chairman of the Board	Elwell	Denny	Denny Elwell Company	N/A
Chairman	Erickson	Jim	Anderson Erickson Dairy Co.	N/A
Director	Fleming	Jeff	Des Moines Art Center	jfleming@desmoinesartcenter.org
CEO	Floss	Craig	Iowa Corn Growers Association	cfloss@iowacorn.org
Chairman	Forsyth	John	Wellmark Blue Cross and Blue Shield	jforsyth@wellmark.com
Vice President	Foster	Rod	McGladrey LLP	rod.foster@rsmus.com
Chairman	Gartner	Michael	Iowa Cubs	mgartner@iowacubs.com
President & CEO	Handley	Terry	Casey's General Stores Inc.	N/A
Attorney	Hansell	Ed	Nyemaster Goode, P.C.	efh@nyemaster.com
Regional President	Helak	Michael	U.S. Bank	michael.helak@usbank.com
President	Henning	Kent	Grand View University	khenning@grandview.com
Chairman, President & CEO	Houston	Dan	Principal Financial Group	N/A
President	Hurd	Richard	Hurd Real Estate Services, Inc.	richard.hurd@hurdrealty.com

#### TABLE J-4 CONTINUED LOCAL BUSINESS LEADERS CONTACTED

Title	Last Name	First Name	Company	Email/Phone
President	Jacobs	Steven	BCC Advisors	steve@bccadvisors.com
President & CEO	Jenner	Jody	Broadlawns Medical Center Foundation	N/A
Regional Director/GM	Johnson	Kevin R.	The Des Moines Register	krjohnson@dmreg.com
President	Jones	Jack	Iowa College Foundation	jack@iowacollegefoundation.org
President & CEO	Jutila	Stephanie	Greater Des Moines Botanical Garden	sjutila@dmbotanicalgarden.com
President & CEO	Keller	Ron	Aureon	ron.keller@aureon.com
President & CEO, and Treasurer	Kelley	Bruce	EMC Insurance Companies	N/A
Chairman & CEO	Keough	Dan	Holmes Murphy & Associates	N/A
President	Kington	Raynard	Grinnell College	contactkington@grinnell.edu
President & CEO	Kleppe	Chad	Master Builders of Iowa	ckleppe@mbionline.com
Founder	Кпарр	Bill	Knapp Properties	N/A
President	Knous	Kristi	The Community Foundation of Greater Des Moines	knous@desmoinesfoundation.org
President	Koehn	Tom	The Waldinger Corporation	N/A
Chairman & CEO	Krause	Kyle	Kum & Go	N/A
Vice President, Economic Connections and Integration	Kunert	Kathryn	MidAmerican Energy Co.	kmkunhert@midamerican.com
President & CEO	Kvalheim	Grant	Athene	grant.kvalheim@athene.com
Chairman & CEO	Lacy	Steven	Meredith Corporation	N/A
President & CEO	LaMair	Greg	LMC Insurance & Risk Management Inc.	greg.lamair@Imcins.com
CEO	Leeds	Kirk	Iowa Soybean Association	administrative@iasoybeans.com
Senior Vice President	LeValley	Joe	Mercy Medical Center	jlevalley@mercydesmoines.org
CEO	Lutz	Terry	McClure Engineering Company	info@mecresults.com
Chairmand & CEO	Mahoney	Tom	ITAGroup, Inc.	drivenbyloyalty@itagroup.com
President	Martin	Marty	Drake University	president@drake.edu
Senior Vice President	McCulloh	Jim	The Weitz Company	jim.mcculloh@weitz.com
Commercial Relationship Manager	McCurnin	Travis	U.S. Bank	travis.mccurnin@u.s. bank.com
CEO	McGonegle	Pat	Iowa Pork Producers Association	info@iowapork.org
CEO	McLean	Ben	Ruan Transportation Mgmt. Services	bmclean@ruan.com
President & CEO	Merchant	S. Ahmed	Merchant Investments	N/A
Managing Partner	Mickelson	John	Midwest Growth Partners	john.mickelson@mgpfund.com
President	Milligan	George	Graham Group, Inc.	N/A
President & CEO	Nelson	Chris	Kemin Industries	N/A
President & CEO	Nelson	Dave	West Bank	N/A
Co-Chairman & CEO	Neugent	Gerry	Knapp Properties	N/A
Vice President, North America	O'Connor	Judd	Corteva Agriscience, Agriculture Division of DowDuPont	N/A
President & CEO	Palmer	Gary	Prairie Meadows Racetrack & Casino	webcontactus@prairiemeadows.com
Owner & CEO	Pappajohn	John	Pappajohn Capital Resources	N/A

### AGENCY AND PUBLIC INVOLVEMENT

#### TABLE J-4 CONTINUED LOCAL BUSINESS LEADERS CONTACTED

Title	Last Name	First Name	Company	Email/Phone
Vice President and General Manager	Pauley	Joe	Andersen Corporation	joe.pauley@andersoncorp.com
Director of Athletics	Pollard	Jamie	Iowa State University Athletics	jbp@iastate.edu
President	Price	Joe	R&R Realty Group	price.joe@rrrealty.com
President	Putnam	Mark	Central College	president@central.edu
Ambassador (President)	Quinn	Kenneth	The World Food Prize Foundation	kquinn@worldfoodprize.org
Founder	Reynolds	Stanley	Reynolds & Reynolds	info@reynolds-reynolds.com
Executive Vice President and Provost	Rice	Tom	University of Iowa Des Moines	tom-rice@uiowa.edu
Vice Chairman	Richards	Michael	Kirke Financial Services	N/A
President	Ringgenberg	Dave	Iowa State Bank	N/A
CEO	Ritz	Bob	Mercy Medical Center	N/A
Senior Vice President	Rommel	Jeff	Nationwide	rommelj@nationwide.com
President & CEO	Ruan IV	John	Ruan Inc.	jruan@ruan.com
President & CEO	Russell	Jeff	Delta Dental of Iowa	claims@deltadentalia.com
President & CEO	Sands	Tom	Iowa Taxpayers Association	tom@iowataxpayers.org
President & General Manager	Sather	Brian	KCCI - TV 8	N/A
President	Simmons	Jay	Simpson College	presidents.office@simpson.edu
President & CEO	Simpson	Mike	Neumann Brothers, Inc.	contact-us@neumannbros.com
Fair Secretary/Manager/CEO	Slater	Gary	Iowa State Fair	N/A
Global Seed Strategy Leader	Smith	Rowdy	Corteva Agriscience, Agriculture Division of DowDuPont	N/A
President & CEO	Sorenson	John	Iowa Bankers Association	jsorensen@iowabankers.com
CEO	Swank	Thomas	American Enterprise Group	tom.swank@americanenterprise.com
President & Chairman of the Board	Taylor	Larry	Merchant Bonding Company	info@merchantsbonding.com
President	Tegeler	Gretchen	Taxpayers Association of Central Iowa	gtegeler@taxpayersci.org
President & CEO	Tollakson	Rick	Hubbell Realty Company	rick.tollakson@hubbellrealty.com
President, Annutiy and Individual Like Distribution	Торе	Chad	Voya Financial	N/A
Executive Vice President & General Manager	Tousley	Mike	The Weitz Company	mike.tousley@weitz.com
Senior Vice President	Traeger	Andrew	John Deere Financial	N/A
Chairman/CEO	Tyler	Kirk	Atlantic Bottling	N/A
Vice President, Marketing and Strategy	Van Dyke	Riaan	Kemin Industries	N/A
President & CEO	Vermeer	Kevin	UnityPoint Health	kevin.vermeer@unitypoint.org
President	Walker Franklin	Angela	Des Moines University	info@dmu.edu
Executive Director	Wampler	Becky	The Wellmark Foundaton	WamplerRA@wellmark.com
County Administrator	Wandro	Mark	Polk County Board of Supervisors	mark.wandro@polkcountyiowa.gov
Business Development Director	Ward	Vince	The Weitz Company	vince.ward@weitz.com
Senior Partner, Shareholder	Watson	David	LWBJ Financial	dwatson@lwbj.com
Senior Vice President	Wheeler	Charles	Robert W. Baird & Co. Inc.	cwheeler@rwbaird.com

### AGENCY AND PUBLIC INVOLVEMENT

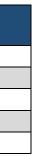
#### TABLE J-4 CONTINUED LOCAL BUSINESS LEADERS CONTACTED

Title	Last Name	First	Company	Email/Phone
The	Last Name	Name	Company	Email/Phone
Dealer Principal	Willis	Rich	Willis Auto Campus	rwillis@willisautocampus.com
Owner/Chairman	Wimer	Connie	Business Publications Corporation, Inc.	conniewimer@bpcdm.com
President	Wintersteen	Wendy	Iowa State University	wwinters@iastate.edu
President & CEO	Wright	Adam	MidAmerican Energy Co.	N/A
Shareholder	Zumbach	Steve	Belin McCormick P.C.	sezumbach@belinmccormick.com

### TABLE J-5

### ECONOMIC DEVELOPMENT LEADERS CONTACTED

Title	Last Name	First Name	Company	Email/Phone
President and CEO	Anderson	Robin	Mason City Chamber of Commerce	randerson@masoncityia.com
President/CEO	Behn	Melinda	Waukee Area Chamber of Commerce	mbehn@waukeechamber.com_
CEO	Beller	Louise	ITC Midwest	lbeller@itctransco.com
President/CEO	Buethe	Brian	Grimes Chamber & Economic Development	brianb@grimesiowa.com
CEO	Byers	Jay	Greater Des Moines Partnership	jbyers@DSMpartnership.com
Executive Director	Campbell	Bill	Spencer Chamber of Commerce	director@spenceriowachamber.org
President & CEO	Casko	Kim	Iowa City Area Chamber of Commerce	kim@iowacityarea.com
President/CEO	Chambers	Carole	West Des Moines Chamber of Commerce	Carole@wdmchamber.org
Executive Director	Chittenden	Jennifer	Des Moines Downtown Chamber of Commerce	director@DTchamber.com
Executive Director	Christianson	Linda	Webster City Area Chamber of Commerce	linda@visitwebstercityiowa.com
Chief Executive Officer	Coffey, IOM	Tim	Clear Lake Area Chamber of Commerce	tim@clearlakeiowa.com
President & CEO	Culhane	Dan	Ames Chamber of Commerce	dan@ameschamber.com
President	Ditzler	Lorin	Des Moines Downtown Chamber of Commerce	lorinditzler@gmail.com
Director	Durham	Debi	Iowa Economic Development Authority	director@iowaeda.com
President and CEO	Easter	Brenda	Indianola Chamber of Commerce	brenda@indianolachamber.com
President	Fisher	Rand	Iowa Area Development Group	<u>rfisher@iadg.com</u>
Director	Goodwin	Heather	Johnston Chamber of Commerce	heather@johnstonchamber.com
Executive Director	Hite	Deb	Emmetsburg Chamber of Commerce	eburgchamber@kemb.org
Executive Vice President	Horton	Melissa	Altoona Area Chamber of Commerce	melissahorton@altoonachamber.org
Chief Administrative Officer	Irwin	Kirk	Greater Des Moines Partnership	kirwin@DSMpartnership.com
Executive Director and Board Secretary	Ivester	Mike	ITC Midwest	mivester@itctransco.com
Director of Business Retention/Expansion and Government Relations	Kamp	Drew	Ames Chamber of Commerce	Drew@ameschamber.com
Director	Kinnick	Rachael	Grinnell Area Chamber of Commerce	rachael@getintogrinnell.com
Executive Director	Knigge	Lisa	Eagle Grove Area Chamber of Commerce	chamber@eaglegrove.com
Executive Director	Landauer	Shannon	Carroll Chamber of Commerce	s.landauer@carrolliowa.com
Executive Vice President of Economic Development	Maahs	David	Greater Des Moines Partnership	dmaahs@DSMpartnership.com



#### TABLE J-5 CONTINUED ECONOMIC DEVELOPMENT LEADERS CONTACTED

Title	Last Name	First Name	Company	Email/Phone
President	Meyer	Eugene	Greater Des Moines Partnership	gmeyer@DSMpartnership.com
Executive Director	Olberding, IOM	Lynn	Marshalltown Area Chamber of Commerce	lolberding@marshalltown.org
Executive Director	Pardubsky	Shar	Iowa Chamber of Commerce Executives	info@dowellmgmt.com
Executive Director	Phillips	Kurt	Boone County Chamber of Commerce	director@booneiowa.us
Executive Director	Price	Amanda	Greater Newton Area Chamber of Commerce	director@experiencenewton.com
President	Ralston	Michael	Iowa Association of Business and Industry	mralston@iowaabi.org
Executive Director	Riley	Heather	Madison County Chamber of Commerce	exec.dir@madisoncounty.com
Executive Director	Sarmento	Darrell	Des Moines West Side Chamber of Commerce	director@desmoineswestsidechamber.org
Executive Director	Scarlett	Lynn	Nevada Chamber of Commerce	chamber@midiowa.net
Executive Director	Schmidt	Kristy	Clive Chamber of Commerce	kschmidt@clivechamber.org
CEO	Sloat	Darien	Fairfield Area Chamber of Commerce	ceo@fairfieldiowa.com
Director	Smith	Ann	Oskaloosa Area Chamber of Commerce	asmith@oacdg.org
Executive Director	Sperry	Lucinda	Norwalk Area Chamber of Commerce	info@norwalkchamber.org
Chief Strategy Officer	Tauscheck	Tiffany	Greater Des Moines Partnership	ttauscheck@DSMpartnership.com
President/CEO	Todtz	Julie	Ankeny Area Chamber of Commerce	jctodtz@ankeny.org
Executive Director	Toliver	Travis	Waverly Chamber of Commerce	travis@waverlychamber.com
President	Van Gundy	Georgia	Iowa Business Council	gvangundy@iowabusinesscoucil.org
Executive Director and Board Secretary	Van Gundy	Georgia	Iowa Business Council	gvangundy@iowabusinesscouncil.org
Executive Administrative Assistant	Vollstedt	Michelle	Iowa Association of Business and Industry	mvollstedt@iowaabi.org
Executive Director	Wiltgen, IOM	Kristina	Decorah Area Chamber of Commerce	kristina@decorahareachamber.com

## TABLE J-6

### TRAVEL AGENTS CONTACTED

Title	Last Name	First Name	Company	Email
Owner		Betty	Budget Travel Inc	budgetbetty@mchsi.com
Leisure Navigator	Boeding	Julie	Allied Travel	julie@alliedtravel.com
Corporate Navigator	Bokhoven	Karen	International Travel Associates	travelrequest@itagroup.com
Navigator in Chief	Burtch	Dean	Allied Travel	dean@alliedtravel.com
Travel Consultant	Griffin	Tammy	ITA Group	drivenbyloyalty@itagroup.com
CTC, Founder and Travel Advisor	Humble	Gregg	Humble Travel	discover@humbletravel.com
Outsourced Travel Manager	Humble	Bonnie	Humble Travel	discover@humbletravel.com
Corporate Travel Supervisor	McClafin	Julie	The Travel Center	jmcclafin@ttcdsm.com
Corporate & Air Only Travel	МсКее	Rita	Travel and Transport	rita.mckee@conagrafoods.com

### TABLE J-6 CONTINUED TRAVEL AGENTS CONTACTED

Title	Last Name	First Name	Company	Email
Corporate & Air Only Travel	Rosenberg	Diana	Allied Travel	diana@alliedtravel.com
Corporate Travel Consultant	Seibert	Mary	ITA Group	drivenbyloyalty@itagroup.com
Corporate Travel Consultant	South, Jr.	Rick	The Travel Center	rsouth@ttcdsm.com
Agency Owner	Stahl	Kathleen	Kathleen Stahl Travel	kathleen@stahltravel.com



Project:Des Moines International Airport<br/>Replacement Passenger Terminal and Enabling Projects Environmental AssessmentMeeting:Public Scoping MeetingDate:August 15, 2018

	Attendee	Organization	Phone	Email Address
1				
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Replacement Passenger Terminal and Enabling Projects Environmental Assessment

**Des Moines International Airport** 

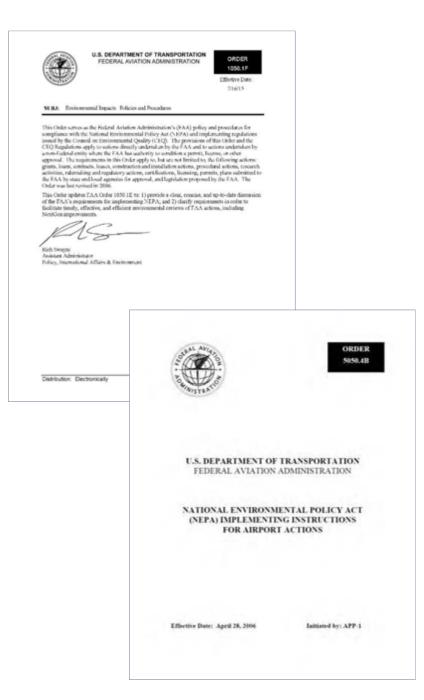
### **PUBLIC SCOPING OPEN HOUSE**

WELCOME



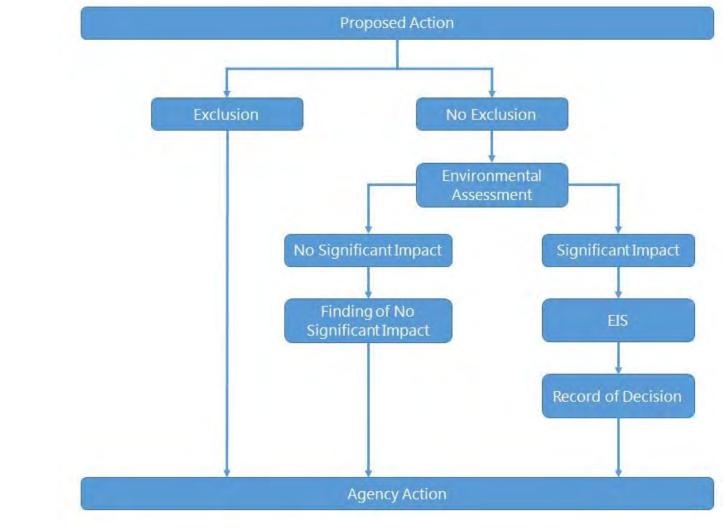
## What is NEPA?

- » NEPA is the National Environmental Policy Act of 1969.
- The Federal Aviation
   Administration (FAA) is the lead agency for aviation-related
   NEPA documentation.
- » All NEPA documentation follows guidance provided in Council on Environmental Quality (CEQ) Regulations and FAA Orders.





## The NEPA Process





## Scoping and its Benefit

- » Provides an opportunity for involvement in the EA process from the start
  - Federal, state, and local agencies and the public can provide information regarding environmental conditions and concerns
- » Information received during scoping helps identify areas of concern
  - Issues that arise during the scoping process can help identify areas deserving emphasis or de-emphasis in the EA









## Purpose and Need

- » The Purpose and Need describes the problem and proposed solution
- » Purpose
  - Better meet the needs of the traveling public
- » Need
  - Out-of-Date Infrastructure
    - Built in 1948 and undergone many renovations
    - Inefficient check-in, baggage screening, security, baggage claim, concessions, restrooms, and hold room areas
  - Increase in Number of Passengers
    - Number of passengers forecast to exceed current design capacity of the terminal, front curb, and parking garage structures
  - Separate cargo and commercial aircraft activities
    - Inefficient use of apron area within cargo ramp and with mixed FBO/GA and commercial aircraft activities



## **Proposed Action**

- » Replace the existing passenger terminal building and enabling projects (this includes 21 project components)
  - Project 1: Construction of a replacement passenger terminal building
  - Project 2: Demolition of the existing passenger terminal building
  - Project 3: Construction of a terminal apron with new deicing pad, remain overnight (RON) pad, and relocation of the storm control building
  - Project 4: Construction of an elevated pedestrian bridge

- Project 5: Realignment of the roadway loop/curbside
- Project 6: Construction of a new parking structure
- Project 7: Construction of a new entry plaza to parking
- Project 8: Construction of a new exit plaza from existing parking
- Project 9: Relocation of employee parking



## **Proposed Action (continued)**

- Replace the existing terminal building and enabling projects **>>** (this includes 21 project components)
  - Project 10: Relocation of the cell phone lot Project 16: Construction of a new taxiway entry
  - Project 11: Construction of a new entry intersection at Fleur Drive
  - Project 12: Relocation of Signature and DSM Project 18: Improvements to south roadways Flying Services
  - Project 13: Demolition of Buildings 34/35
  - Project 14: Construction of general aviation hangars
  - Project 15: Expansion of south apron

- Project 17: Construction of a new cargo deicing pad
- and parking
  - Project 19: Construction of new rental car customer service building and rental car readyreturn area
  - Project 20: Improvements to Fuel Road
  - Project 21: Construction of a new dry detention basin



## **Proposed Action**





## **NEPA Resource Categories**

- » Air Quality
- » Biological Resources
- » Climate
- » Coastal Resources
- » Department of Transportation Act, Section 4(f)
- » Farmlands
- » Hazardous Materials, Solid Waste, and Pollution Prevention

- » Historical, Architectural, Archaeological, and Cultural Resources
- » Land Use
- » Natural Resources and Energy Supply
- » Noise and Noise-Compatible Land Use
- » Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks
- » Visual Effects
- Water Resources (including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers)



## Next Steps

- » Determine study areas
- » Describe existing environmental conditions (affected environment)
- » Analyze potential environmental effects (environmental consequences)
  - Determine any mitigation, if necessary
  - Assess cumulative environmental effects
- » Publish Draft EA (scheduled for winter 2019)
  - Reviewed by public and federal, state, and local agencies
  - Address comments received
- » Publish Final EA
  - FAA issues finding



## How to Provide Scoping Comments

- » Fill out comment card this evening
- » Send written comments via U.S. mail (must be postmarked by Friday, September 14, 2018) to:

Mr. Bryan Belt Des Moines Airport Authority 5800 Fleur Drive, Suite 207 Des Moines, IA 50321

» Send written comments via email to <u>bmbelt@dsmairport.com</u> by Friday, September 14, 2018.



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### **COMMENT FORM**



Des Moines Airport Authority / Des Moines International Airport



**Replacement Terminal and Enabling Projects Environmental Assessment** 

### **Scoping Meeting - Comment Form**

The Airport, by and through the Des Moines Airport Authority, is preparing an Environmental Assessment for the Replacement Terminal and Enabling Projects at Des Moines International Airport.

### **Comments:**

Comments are not limited to this form. Please attach any additional sheets as necessary.

Name:			
Address:			
City, State, Zip:			
Email:			

### Comments on the scope of the EA will be accepted through September 14, 2018.

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, be advised that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so. Written comments may be mailed to Mr. Bryan Belt, Des Moines Airport Authority, 5800 Fleur Drive, Suite 207, Des Moines, IA 50321. Comments may also be submitted by email to bmbelt@dsmairport.com.

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### J.3 AGENCY AND PUBLIC OPEN HOUSE FOR THE DRAFT EA

The following pages include:

- » Draft EA Notice of Availability and Public Open House
- » Open House Sign-in Sheet
- » Open House Poster Boards
- » Comment Form

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### OFFICIAL PUBLICATION

### IN THE IOWA DISTRICT COURT IN AND FOR POLK COUNTY U.S. BANK NATIONAL ASSOCIATION, Plaintiff,

ASSOCIATION, Pilaintiff, V. CRAIG COLTON, and SPOUSE OF CRAIG COLTON, IF ANY, as Heirs of CAROLYN S. COLTON; LORETTA CUTLER, IF ANY, as Heirs of CAROLYN S. COLTON; KEITH COLTON and SPOUSE OF KEITH COLTON and SPOUSE OF JAMES COLTON and SPOUSE OF JAMES COLTON, IF ANY, as Heirs of CAROLYN S. COLTON; JONATHAN COLTON and SPOUSE OF JAMES COLTON, IF ANY, as Heirs of CAROLYN S. COLTON; JONATHAN COLTON and SPOUSE OF JAMES COLTON, IF ANY, as Heirs of CAROLYN S. COLTON; JONATHAN COLTON and SPOUSE OF JAMES COLTON, IF ANY, as Heirs of CAROLYN S. COLTON; JONATHAN COLTON BARDIAN, IF ANY, as Heirs of CAROLYN S. COLTON; MARY MINNIS and SPOUSE OF MARY MINNIS and SPOUSE OF MARY MINNIS ANY, AS HEIRS OF CAROLYN S. COLTON; GPOUSE OF JAMES COLTON; GPOUSE OF ANY, AS HEIRS OF CAROLYN S. COLTON; CRYSTAL MIKELL and SPOUSE OF CRYSTAL MIKELL IF ANY, as HEIRS OF CAROLYN S. COLTON; UNKNOWN HEIRS OF CAROLYN S. COLTON; COLTON; UNKNOWN HEIRS OF CAROLYN S. COLTON; COLTON; UNKNOWN HEIRS OF CAROLYN S. COLTON; CAROLYN S. CO

Defendants. STATE OF IOWA by and through the lowa Department of Revenue; INTERNAL REVENUE SERVICE, an Agency of the United States of America; Own

SERVICE, an Agency of the United States of America; ALL KNOWN AND UNKNOWN CLAIMANTS AND ALL PERSONS KNOWN AND UNKNOWN CLAIMING ANY RIGHT, TILLE OR INTEREST AND ALL OF THEIR HEIRS, SPOUSES, A SSIG N S, G R A N TE E S, LEGATEES, DEVISES AND ALL BENEFICIARIES OF EACH AND ALL OF THE ABOVE-NAMED DEFENDANTS; and PARTIES IN POSSESSION, Defendants...

AND ALL OF THE ABOVE-NAMED DEFENDANTS; and PARTIES IN POSSESSION, Defendants. CASE NO. EQCE084235 ORIGINAL NOTICE BY PUBLICATION DEFENDANCI: COITON, If any; Lottfr. Criter; Spouse of Lorton; Spouse of Lort; Spouse of Lorton; Spouse of Keilth Colton, if any; Jonets Colton; Spouse of James Colton; if any; Jonethan Colton; Spouse of Jonathan Colton, if any; Jonethan Colton; Spouse of Mary Minnis; Conton; Creditors of Carolyn S. Colton; All known and Unknown Claimants and all Persons Known and Unknown Claiming any Right, Title or Interest and All of Their Heirs, Spouses, Assigns, Granees, Legatees, Devises and all of the Above Named Defendants You are hereby notified that there is now on file in the office of the Clerk of the District Court in and for Polk County, Iowa, an Amended Foreclosure Petition (Equity) in the above-entitled action which prays for an in rem judgment in the amount of first lien upon the following and first lien upon the following of Mary Spouses, Cheater a differed a first lien upon the following of the low following Legity in the above and all for the Jone the point courter as if accrues, the costs of this action, and that said sums be declared a first lien upon the following on Officing

first lien upon the following described premises located in Polk County, Iowa, to wit: Lot Sixteen (16), Block One (1), DeWolfe's Addition, an Official Plat, now included in and forming a part of the City of Des Moines, Polk County, Iowa. That the Mortgage on the above-described real estate be foreclosed, that a Special Execution issue for the sale of as much of the mortgaged premises as is necessary to satisfy the judgment and for such other relief as the Court may deem just and equitable. The attorney for Plaintiff is Donald J. Pavelka, Jr., whose address is Suite 401, 421 West Broadway, Council Bluffs, Iowa 51503, Telephone: (712) 256-5566.

lowa 51503, Telephone: (712) 256-556. You are further notified that unless you file a Motion or Answer on before the 2nd day of May, 2019, in the lowa District Court for Polk County at the courthouse located at 500 Mulberry S1., Des Moines, lowa 5030+4238, judgment by default may be rendered against you for the relief demanded in the Petition. This case has been filed in a county that utilizes electronic filing. You should refer to (1) lowa Court Rules Chapter 16 for general rules and information on electronic filing; and (11) lowa Court Rules Chapter 16, division VI regarding protection of personal information in court filings.

VI regarding personal information in court filings. If you require the assistance of auxiliary aids or services to participate in Court because of a disability immediately call your district ADA coordinator at 515-286-3394. (If you are hearing impaired call Relay Iowa TTY at 1-800-735-2942). IMPORTANT - YOU ARE ADVISED TO SEEK LEGAL ADVISED TO SEEK LEGAL ADVICE AT ONCE TO PROTECT YOUR INTERESTS

IN THE IOWA DISTRICT COURT OF POLK COUNTY EQUITY NO: EQCE084145 ORIGINAL NOTICE FOR PUBLICATION Bank of New York Mellon Trust Company, N.A. as Trustee for Mortgage Assets Management Series I Trust Plaintiff, Series i Plaintiff

### OFFICIAL PUBLICATION

CLERK OF THE ABOVE COURT Polk County Courthouse 500 Mulberry Street, Des Moines, IA 50309-4328 IMPORTANT: YOU ARE ADVISED TO SEEK LEGAL ADVICE AT ONCE TO PROTECT YOUR INTERESTS.

YOU ARE ADVICE AT ONCE TO PROTECT YOUR INTERESTS.
 IN THE JUVENILE COURT FOR POLK COUNTY STATE OF IOWA EX. REL. JOHN P. SARCONE, POLK COUNTY ATTORNEY IN THE INTEREST OF A.P. CHILD JUVENILE NO. JVJV245893 ORIGINAL NOTICE AND NOTICE OF HEARING TO: I Unknown and Putative Fathers to minor child A.P. born on July 30, 2018, You are hereby notified that there is on file in the office of the Clerk of Juvenile Court, a petition in the above entitled action, a copy of which is a attached hereto. Said termined and the potention.
 Proventile Court, a petition in the above entitled action, a copy of which is a attached hereto. Said relationship as that the potention.
 Pursuant to an Order of this Court may be in the child's best interest. For further particulars, see attached petition.
 Pursuant to an Order of this Court on for a TERMINATION OF PARENTAL RIGHTS HEARING BEFORE A. JUDGE FOR BUVENILE COURT ON THE 7th of May, 2019 at 8:30AM. IN ROOM 210 OF THE POLK COUNTY JUSTICE CENTER, DES MOINES, IOWA.
 You are further notified that you have the is have a pointed by the Court, unless you appear thereto and defend at the time and place identified above, that termination of parental rights may be decreed as praved in said petition. You are further notified that you have the is have the geal coursel and if you desire but are financially unable to employ a lawyer, one will and can be appointed by the Court, with the seel thereof.

affidavit to demonstrate proc. c. indigence. WITNESS, the undersigned, Clerk of this Court, with the seal thereof, hereunto affixed of Des Moines, Iowa, in sold County of Polk on the 25th day of March, 2019. CLERK OF DISTRICT COURT Rv Anne Sheeley

By Anne Sheeley Deputy Clerk of Juvenile Court

CLERK OF DISTRICT COURT Deputy Clerk of Juvenile Courf IN THE JUVENILE COURT FOR POLK COUNTY STATE OF IOWA EX. REL. JOHN P. SARCONE, POLK COUNTY ATTORNEY IN THE INTEREST OF KS. JUVENILE NO. JVJV245850 ORIGINAL NOTICE AND NOTICE OF HEARING TO: Unknown and Putative Fathers to minor child K.S. born on March 28", 2014 You are hereby notified that here is on file in dbo office of the Clerk of Juvenile Indoor office of the Clerk of Juvenile Indoor office of the Clerk of Juvenile Indoor of this Court make such findings and orders as may be in the child's best interest. For further particulars, see attached petition. Pursuant to an Order of this Court entered of record you are hereby notified that the petition in the above entitled case has been set down for a TERMINATION OF PARENTAL RIGHTS HEARING BEFORE A JUDGE FOR JUVENILE COURT ON THE 30" of May, 2019 at 8:30AM. IN ROOM 210 OF THE POLK COUNTY JUSTICE CENTER, DES MOINES, IOWA. You are further notified that unless you appear thereto and defend at the time and place identified above, that termination of parental rights may be decreed as prayed in said petition. You are further notified that you have the right to legal coursel and if you desire but are financially unable to employ a lawyer, one will and can be appointed by the Court of May to get in an order of the court of INGENER A JUDGE FOR JUVENILE COURT ON THE 30" of May, 2019 at 8:30AM. IN ROOM 210 OF THE POLK COUNTY JUSTICE CENTER, DES MOINES, IOWA. You are further notified that unless you appear thereto and defend at the time and place identified above, that termination of parental rights may be decreed as prayed in said petition. You are further notified that you have the right to demonstrate proof of indigence. WITNESS, the undersigned, Clerk the is Court, will the seal thereof.

affidavit to demonstrate proor or indigence. WITNESS, the undersigned, Clerk of this Court, with the seal thereof, hereunto affixed at Des Moines, lowa, in said County of Polk on the 25th day of March, 2019, CLERK OF DISTRICT COURT CLERK OF DISTRICT COURT Deputy Clerk of Juvenile Court

Deputy Clerk of Juvenile Courf Notification hereby is given that Wells Fargo Bank, National Association, 101 N. Phillips Avenue, Sioux Falls, South Dakota 57104, has filed an application on April 5, 2019 with the Comptroller of the Currency, as specified in 12 C.F.R. 5:30 of the Comptroller's regulations, for permission to establish a domestic branch to be known as Northstar Building located at 801 Wolnut St, Des Moines, Polk County, IA 50309. Any person wishing to comment on this application may file Expert, Office of the Comptroller of the Currency, Mail Stop 10E-2, 400 7th Street SW, Washington, DC 20219 within 30 days after the date of this publication. The non-confidential portions of the Currency as the comptroller of the public file. This file is available for public linspection during regular businesshours.

### OFFICIAL PUBLICATION

UPFICIAL PUBLICATION intormation presented in the Draft EA may be sent to Brvan Belt at 5000 Flevr Drve, Suite 207, Des Moines, 5021, Con-Electronic and hand-delivered comments must be received no ider than May 10, 2019. Moiled other than May 10, 2019. Be advised that all comments identifying information may be information, we cannot guarantee that we will be able to do so. A public open house for the Draft EA will be able to do so. A public open house for the Draft EA will be held on May 7, 2019 promston, we cannot guarantee that we will be able to do so. A public open house for the Draft EA will be held on May 7, 2019 proms 50 mb 07.000m CDT in the Authority's Cloudroom on the second floor of the existing passenger terminal at the Airport. Comments on the Draft EA will be addressed, as appropriate, in the final EA. The Final EA will be made available at the Authority's vebsite. website.

NOTICE OF DEMAND FOR DED TO: John P. Bogle and Bonita Bogle, husband and wife, and successors in interest, as Venders You are hereby notified, pursuant to lowa Code §614.21(40), that Doris M. Carpenter, as Vendee under that certain Real Estate Installment Contract dated April 30, 1982, filed May 6, 1982 in Book S165, Page 928 in the office of the Polk County. Recorder (the "Contract"), is now demanding that a Deed in Fulfillment of Contract be provided by John P. Bogle and Bonita Bogle, husband and wife, as Venders under said Contract. Vender nuder said Contract. Vender nuder said Contract. Vender on ders said Contract. Vender on the following facts. 1) That the Contract has been fully facts. 1) That the Contract has been fully that the contract has been fully amounts due

performed and all amounts due and owing have been paid to the

performed and all amounts due and owing have been paid to the Vendors; 2) That the Vendee is in physical possession of the property If the Deed is not provided within forty-five days of service, an action to foreclose or forfeit the contract has not been commenced within such forty-five day period, the vendee may file an affidavit showing service and compliance with lowa Code \$614.21(4b), whereupon the Auditor shall correct the county records as provided in lowa Code \$58.67 to indicate the rights of the vendor have been vested in the vendee. You will therefore take notice and govern yourself accordingly. Vendee: Doris M. Carpenter Shannon L. Sobek ICIS PIN No: AT011988 Wasker, Dorr, Wimmer & Marcouiller, P.C. 4201 Westown Parkway, Suite 250 West Des Moines, IA 50266 Attorney for Vendee

NOTICE OF JUDICIAL VACANCY There is a District Associate Judge vacancy in judicial election district 5-C (Polk County) as the result of the retirement of the Honorable Odell McGhee. This vacancy will be filled in accordance with the provisions of lowa Code section 602.6304 (2019). The person appointed to this position will be expected to carry our any assignment made bit the chief Judge of the Fifth Judicial district that is within the jurisdiction of a district associate iudge, as defined in lowa Code section 602.6306 (2019). Anyone who wishes to be considered for appointment to fill this vacancy must complete a written application as described below. Applicants for this position must have the following minimum qualification: (1) be an attorney admitted to practice law in lowa; (2) be a resident of judicial district 5-C (Polk County) at the time of appointment; and (3) be able, measured by the persons age at the time of appointment, to complete the initial term of office and the time of appointment, so considered applications must be able of the District Court Administrator, email request to inany other manner. Completed applications with a copy submitted to the Chairperson of the District 5-C Maginate Application. There are five commissioners will be provided with each application. There are five commissioners will be provided with each application. The DEADLINE FOR BUDICIES AND APRIL 9, 2019 AT 4:00 P.M. YOUR Complete In the perivation. The DEADLINE FOR SUBMITTING APRIL 9, 2019 AT 4:00 P.M. YOUR COMPLETED APPLICATION AND ANY REFERENCES MUST BE DELIVERED TO JENNIFER WEBSTER AT THE POLK COUNTY JUSTICE CENTER DES MOINES, INVA BEFORE TURSDAY APRIL 9, 2019 AT 4:00 P.M. YOUR COMPLETED APPLICATION AND ANY REFERENCES MUST BE DELIVERED TO JENNIFER WEBSTER AT THE POLK COUNTY JUSTICE CENTER DES MOINES, INVA BEFORE TURSDAY APRIL 9, 2019 AT 4:00 P.M. PLEASE NOTE THAT THE RECEVED BY APRIL 9, 2019 AT 4:00 P.M. ONTE SUBMITE 10 ADD ANY REFERENCES MUST BE DELIVERED TO JENNIFER

### OFFICIAL PUBLICATION OFFICIAL PUBLICATION

NOTICE OF PUBLIC HEARING OF THE CITY COUNCIL OF THE CITY OF WEST DES MOINES IN THE STATE OF IOWA, ON THE MATTER OF THE PROPOSAL TO ENTER INTO A DEVELOPMENT AGREEMENT WITH DALTON PARTNERS, LLC AND MEGA ST KILDA LLC AND THE HEARING THEREON

THE HEARING THEREON PUBLIC NOTICE is hereby given that the Council of the City of West Des Moines in the State of Iowa, will hold a public hearing on April 15, at 5:30 P.M. in the Council Chambers, City Hall, 4200 Mills Civic Parkway, West Des Moines, Iowa, at which meeting the Council proposes to take action on the proposal to enter into a Development' Agreement (the "Agreement") with Dalton Partners, Owner') and Mega St Kilda LLC ("Tenant").

The Agreement would obligate the Tenant to construct certain Minimum Improvements (as defined in the Agreement) on certain real property located within the Historic West Des Moines Urban Renewal Area as defined and legally described in the Agreement and consisting of the renovation of the Development Property, together with all related site improvements, as outlined in the proposed Development Agreement. One of the obligations of the Tenant relates to employment relates and/or creation.

creation. Pursuant to the Regulatory Compliance Fund program, the Agreement would obligate the City to submit reimbursements to the Tenant consisting of not more than 50% of the total project cost, or \$75,000, whichever is less, subject to the terms and conditions set forth in the Agreement. Pursuant to the Property Improvement Fund program, the Agreement would further obligate the City to submit reimbursements to Tenant in the form of loan not to exceed \$75,000 for improvement projects subject to City approval and the terms of the Agreement, and the terms of the Agreement con in full within 10 years of project completion.

This Agreement is consistent with the Regulatory Compliance Fund program and the Property Improvement Fund program. The program description and a copy of the Agreement are on file for public inspection during regular business hours in the office of the City Clerk, City Hall, City of West Des Moines, Iowa.

Des Moines, Iowa. At the above meeting the Council shall receive oral or written objections from any resident or property owner of said City, to the proposal to enter into the Agreement with the Property Owner and Tenant. After all objections have been received and considered, the Council will at this meeting or at any adjournment thereof, take additional action on the proposal or will abandon the proposal to authorize said Agreement.

This notice is given by order of the City Council of the City of West Des Moines in the State of Iowa, as provided by Section 364.6 of the City Code of Iowa.

/s/ Ryan T. Jacobson City Clerk 3475383 April 5, 2019

Notice of Public Sale: Auction date 4/17/2019 This auction will be online for bids and viewing at www.selfstorageacution.com Notice of Sale: Squirrel Storage Pleasant Hill 1430 Metro East Drive Pleasant Hill, IA 50327 Amount Due Unit Tenant Address \$481.60 26 Kelly Mehmen 2710 1st Ave S #101 Altoona, Iowa 50009

Notice of Public Sale: Auction date 4/17/2019 This auction will be online for bids and viewing at www.selfstorageacution.com Notice of Sale: Des Moines Squirrel Storage 6674 NW 26th Street Des Moines, 1A 50313 Amount Due Unit Tenant Address \$341.06 9 Dylan Boston 6688 NW 51st ST Johnston , 1A 50131

Donaston IA S0131 NOTICE OF SALE OPEN TO THE PUBLIC According to the lease by and between the listed tenants and TKC StorageMart and it's related parties, assigns and affiliates in order to perfect the lien on The somager index of the lien on the unit and upon courtesy inspection the unit(s) were found to contain: Unit #103- Justin Hodges - Totes, Tools, Wood Unit #403- Brandon Harter -Shelving, Stereo Systems, Cleaning Products Unit #403- Jessica Garland -Hubcaps, Tools Unit # 1117- Michael Shepard -Cloths, TV Stand Items will be auctioned online at ibid4storage.com or disposed of at the site address listed below on 4/19/19 at 10:00 am at the address listed below to satisfy owner's lien in accordance with state statues, All bid sales are cash only and sold "As IS"AT THE ADDRESS LISTED BELOW TO SATISFY OWNER'S LIEN IN ACCORDANCE WITH STATE STATUES, TERMS OF SALE ARE CASH ONLY.

C. MOUNTAIN PLACE; THENCE SOUTHWESTERLY, ALONG THE SOUTH RIGHT OF WAY LINE OF GRAND AVENUE, ALSO BEING THE SOUTH LINE OF LOT C. MOUNTAIN PLACE, TO THE POINT OF BEGINNING. Section 3. Provisions for Division of Taxes Levied on Taxable Property in the Urban Renewal Area. After the effective date of this ordinance, the taxes levied on the taxable property in the Urban Renewal Area each year by and for the benefit of the State of olwa, the City, the County and any school district or other taxing district in which the Urban Renewal Area is located, shall be divided as follows: (a) that portion of the taxes which would be produced by the rate at which the tax is levied of time distribution of the taxes levied of the calendar year preceding the taxable property in the Urban Renewal Area, as shown on the renewal Area, as of January 1 of the calendar year preceding the trist calendar year in which the City certifies to the County Addiar the amount of loans, advances, indebtedness, or bonds apyable from the special fund referred to in paragraph (b) below, shall be allocated to and when collected be paid into the Urban Renewal Area on the Urban Renewal Area on the Urban Renewal Area on the draving district into which all other property taxes are paid. For the purpose of allocating taxes levied by or for any faxing district which did not include the territory has been annexed or otherwise included after the effective date, the sessent roll applicable to property in the annexed area. (b) that partion of the taxes each year in excess of suid and the dinance which amends the plan for the Urban Renewal Area on include the annexed area. (b) that partion of the taxes each year in excess of suid and ortic apprice of a school district imposed pursuant to Section 403.9(1), of the code of lowa, incurred by the City to finance or refinance, in which assessed valuation of the taxable property orthe taxes for the regular district in the school district staxes for the instaxe for the regular district on the taxable property in the urban

manner as taxes on all other property. (c) the portion of taxes mentioned in subsection (b) of this section and the special fund into which that portion shall be paid may be irrevocably pledged by the City for the payment of the principal and interest on loans, advances, bonds issued under the advances, bonds issued under the Code of lowa, or indebtedness incurred by the City to finance or refinance in whole or in part Area. (d) as used in this section, as used in this section,

projects in the Urban Renewal Area. (d) as used in this section, the word "taxes" includes, but is not limited to, all levies on an ad valorem basis upon land or real property. Section 4. Repealer. All ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed. Section 5. Saving Clause. If any section, provision, or part of this ordinance shall be adjudged invalid or unconstitutional, such adjudication shall not affect the validity of the ordinance as a whole or any section, provision or part thereof not adjudged invalid or unconstitutional. Section 6. Effective Date. This ordinance shall be effective after its final passage, approval and publication as provided by the City Council of the City of West Des Moines, lowa, on the 1st day of April, 2019.

### OFFICIAL PUBLICATION

OFFICIAL PUBLICATION EAST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 14, TO THE SOUTHERLY POINT OF THE NORTH LINE OF STREET LOT 'B', THE CASCADES AT JORDAN CREEK PLAT I, AN OFFICIAL PLAT, NOW INCLUDED IN AND FORMING A PART OF THE CITY OF WEST DES MOINES, DALLAS COUNTY, IOWA; THENCE WEST, TO THE WEST RIGHT OF WAY LINE OF SOUTH 81ST STREET, SAID POINT 81 BEING THE NORTHWEST CORNER OF SAID STREET LOT 'B'; THENCE WEST' AND THENCE NORTHWEST ALONG THE SOUTH 81ST STREET, THENCE WEST, ALONG THE SOUTHWEST ERLY, RIGHT OF WAY OF SOUTH 81ST STREET, TO THE SOUTHEAST CORNER OF STREET LOT 'A' OF THE CASCADES AT JORDAN CREEK PLAT I, AS FILED IN BOOK 2015 PAGE 13814 OF THE DALLAS COUNTY RECORDER'S OFFICE; SOUTHWESTERLY, A'OF THE CASCADES AT JORDAN CREEK PLAT I, AS FILED IN BOOK 2015 PAGE 13814 OF THE DALLAS COUNTY RECORDER'S OFFICE; SOUTHWESTERLY, A'OF THE CASCADES AT JORDAN CREEK PLAT I, TO THE SOUTH LINE OF SAID STREET LOT 'A' OF THE CASCADES AT JORDAN CREEK PLAT I, TO THE SOUTHWESTERLY, ALONG THE SOUTHWESTREL LOT 'A' THENCE NORTHWEST CONNER OF SAID STREET LOT CONNER OF SAID STREET LOT 'A' THENCE MEST LINE OF

THENCE NORTHWESTERLY, ALONG THE WEST LINE OF STREET LOT 'A', TO A POINT ON THE NORTH LINE OF PARCEL "AA" IN BOOK 2014 PAGE 4167; THENCE SOUTHWESTERLY, ALONG THE NORTH LINE OF SAID PARCEL "AA". TO THE POINT OF BEGINNING. Section 3. Provisions for Division of Taxes Levied on Taxable Property in the Urban Renewal Area. After the effective date of this ordinance, the taxes levied on the taxable property in the Urban Renewal Area each year by and for the benefit of the State of lowa, the City, the County and any school district or other taxing district in which the Urban Renewal Area is located, shall be divided as follows: (a) that portion of the taxable property in the Urban Renewal Area, as shown on the taxes which would be produced by the rate at which the tax is levied each year by or for each of the taxable property in the Urban Renewal Area, as shown on the assessment roll as of January 1 of the calendar year preceding the first calendar year preceding the first calendar year preceding the first calendar year in which the City, certifies to the County Auditor the amount of loans, advances, indebtedness, or bonds taxing district in which the function the special fund referred to in paragraph (b) below, shall be allocated to and when collected be paid. For the property taxes are paid. For the trong Renewal Area on the effective date of this ordinance, but to which the territory in the urban Renewal Area on the effective date of this ordinance, but to which the territory in the disting district which all other property in the annexed area. (b) that portion of the taxes each year in excess of such amours shall be allocated to and when collected be paid into a special fund of the City to ay the provided an sterres on loans, money advanced or of the yound and sessed valuation of the faxable property in the annexed area. (b) that portion of the taxes for the city to ay the provided in Section 433.22, except that taxes for the regular and equipment levy of a school district in mosod and interest of acch taxes for the

manner as taxes on all other property. The portion of taxes section and the special fund into which that portion shall be poid may be irrevocably pledged by the City for the payment of the principal and interest on loans, advances, bonds issued under the cathority of Section 40.3 (1) of the Code of lowa, or indebtedness incurred by the City to finance or refinance in whole or in part projects in the Urban Renewal Area. (d) \_\_\_\_\_\_s used in this section,

Vs. Parties in Possession; Unknown Spouse, if any, of Velda M Anderson; United States of America, Secretary of Housing and Urban Development; The Estate of Velda M Anderson, Deceased; Darla Welch; Unknown Spouse, if any, of Darla Welch; Kyle Anderson; Unknown Spouse, if any, of Kyle Anderson; Nardel Anderson; Unknown Spouse, if lowa, Department of Revenue, et al.

lawa, bepartment of Revenue, et al. Defendants. You are notified that a petition has been filed in the office of this court naming you as a defendant in this action. The petition was filed on February 11, 2019, and prays for foreclosure of Plaintiffs Mortgage in favor of the Plaintiffs Mortgage in favor of the Plaintiffs on the property described in this notice and judgment for the unpaid principal, amount of \$137,870.94, with 3.94% per annum interest thereon from July 25, 2008, together with late charges, advances and the costs of the action including (but not limited to) title costs and reasonable attorney's fees, as well as a request that said sums be declared a lien upon the following described premises from July 25, 2008, located in Polk county, lowa: LOT 9 IN BLOCK 1 IN RIGGWAY SUBDIVISION, NOW INCLUDED IN AND FORMING A PART OF THE CITY OF WEST DES MOINES, 120 Konneonly known as 1725 Grand Ave, West Des Moines, 1A 502055 (the "Property")

MOINES, IOWA, commonly known as 1725 Grand Ave, West Des Moines, IA 50265 (the "Property") The petition further prays that the Mortgage on the above described real estate be foreclosed, that a special execution issue for the sale of as much of the mortgaged premises as is necessary to satisfy the judgment and for other relief as the Court deems just and equitable. For further details, please review the petition on file in the clerk's office. The Plaintiffs attorney is Bryan Laya, of SouthLaw, P.C.; whose address is 1401 50th Street. Suite 100, West Des Moines, IA 50266. The plaintiff has elected foreclosure without redemption. This means that the sale of the mortgaged property will accur promptly after entry of judgment with the court delay the sale. If we delayed unit twelve will be delayed unit if the petition includes a waiver of deficiency judgment if the mortgaged property is your residence and is a one-family or two-family dwelling or until two months form entry of judgment if the mortgaged property is not your residence or is your residence but not a one-family or two-family dwelling. You will have no right of redemption after the sale. The purchaser at the sale will be entified to immediate possession of the mortgaged property. You may purchase at the sale.

Sule will be climite to immergaged prossession of the mortgaged property. You may purchase at the sale. You must serve a motion or answer on or before 10th day of May, 2019, and within a reasonable time thereafter, you must file your motion or answer with the Clerk of Court for Polk County, at the county courthouse in Des Moines, Iowa. If you fail to respond, iudgment by default may be rendered against you for the relief demanded in the petition. If you require the assistance of auxiliary aids or services to participate in a court action because of a disability, immediately call your District ADA Coordinator at 515-286-3394. If you are hearing impaired, call Relay Iowa TTY at 1-800-735-2942. This case has been filed in a county that utilizes electronic filing. You may find more information and general rules governing electronic filing in Iowa Court Rules Chapter 16. You may find information concerning protection of personal information in court filings in lowa Court Rules Chapter 16, Division VI. By:

Directors are Angeline M. Vaughan, each for a 3-year the meeting. No additional normation of the meeting or by written ballots investing of the meeting. So and a strength of the meeting is to report of the meeting. As one of the meeting is to report of the meeting. As of the meeting is to report of the meeting is to report of the meeting. As of the meeting is to report of the meeting is to report of the meeting. The purpose of the meeting is to report written ballot results for a company of the 2018 Annual Meeting of the 2018 Annual Meeting minutes, the election of the Board of Directors, and to address other matters are expected to the address other brought before the meeting. Nominees for election to the Board of Directors are Angeline M. Lawin, No additional nominations place by written ballots results for a syear term, No additional nominations there there and a the meeting in the set of the set of the meeting in the prove of the the meeting is to report to the meeting, or by mail with a postmark not less than 10 days prior to the meeting, or by mail with a postmark not less than 10 days prior to the meeting, or by mail with a postmark not less than 10 days prior to the meeting, or by mail with a postmark not less than 10 days prior to the meeting, or by mail with a postmark not less than 10 days prior to the meeting, or by mail with a postmark not less than 10 days prior to the meeting of the requires an admission ticket that must be requested at least two weeks in advance of the meeting is a bolt or advance of the meeting or by 2019. Policyholders who wish to request a ballot or admission ticket may be advance of the meeting attendance at the meeting or by 2012. Distance and attend the meeting or by 2012 and attend the mee

A second second

Moines International Airport Website (www.dsmairport.com); and at the South Side Library (1111 Porter Avenue, Des Moines IA, 50315). Written comments on the

	EKE		
	EADL	INE	15
INSUFFICIENT.			
Dated this day of I			
/s/ JUDGE	HEAT	HER	L,
LAUBER, Charipe	rson		
Magistrate		Appoint	ing
Commission			
District 5-C			
Polk County Court			
Des Moines, Iowa	50309		

# NOTICE OF PUBLIC HEARING OF THE CITY COUNCIL OF THE CITY OF WEST DES MOINES IN THE STATE OF IOWA, ON THE MATTER OF THE PROPOSAL DEVELOPMENT AGREEMENT WITH COMPORT LLC AND LEGACY CAPITAL PARTNERS, INC. AND THE HEARING THEREON

THEREON PUBLIC NOTICE is hereby given that the council of the City of West Des Moines in the State of Iowa, will hold a public hearing on April 15, at 5:30 P.M. in the Council Chambers, City Hall, 4200 Mills Civic Parkway, West Des Moines, Iowa, at which meeting the Council proposes to take action on the proposal to enter into a Development Agreement (the "Agreement") with ComPort LLC ("Property Owner") and Legacy Capital Partners, Inc. ("Tenant").

Capital Partners, Inc. ("Tenant"). The Agreement would obligate the Property Owner to construct certain Minimum Improvements (as defined in the Agreement) on certain real property located within the Historic West Des Moines Urban Renewal Area as defined and legally described in the Agreement and consisting of the renovation of the Development Property, together with all related site improvements, as outlined in the proposed Development Agreement. One of the obligations of the Tenant relates to employment retention and/or creation.

Pursuant to the Regulatory Compliance Fund program, the Agreement would obligate the City to submit reimbursements to the Property Owner consisting of not more than 50% of the total project cost, or \$75,000, whichever is less, subject to the terms and conditions set forth in the Property Improvement Fund program, the Agreement would further obligate the City to submit reimbursements to Property Owner in the form of loan not to exceed \$75,000 for improvement projects subject to City approval and the terms of the Agreement, and Property Owner would pay back the loan in full within 10 years of project completion. This Agreement is consistent with

This Agreement is consistent with the Regulatory Compliance Fund program and the Property Improvement Fund program. The program description and a copy of the Agreement are on file for public inspection during regular business hours in the office of the City Clerk, City Hall, City of West Des Moines, Iowa.

At the above meeting the Council shall receive oral or written objections from any resident or property owner of soid City, to the proposal to enter into the Agreement with the Property Owner and Tenant. After all objections have been received and considered, the Council will at this meeting or at any adjournment thereof, take additional action on the proposal or will abandon the proposal to authorize said Agreement.

This notice is given by order of the City Council of the City of West Des Moines in the State of Iowa, as provided by Section 364.6 of the City Code of Iowa.

/s/ Ryan T. Jacobson City Clerk, City of West Des Moines, State of Iowa

STATUES.		UF	SALE
ARE CASH (	ONLY.		
Please go to	) Ibid4stor	age.co	om for
all bids			
StorageMart	1074		
900 Hackly	Ave		
Des Moines I	owa 50315		
515-287-0082 E	Ext. 2		

CRDINANCE NO. 2353 An Ordinance Providing for the Draxable Property in whe 1525 Grand Urtager Renewal Area, Prostant to Section 403.19 of the BE IT ENACTED by the members of this ordinance is to provide for the City Council of the City of West Des Moines, Iowa: Section 1. Purpose. The purpose of this ordinance is to provide for the City Council of the State, City, county, school districts or the division of taxes levied on the taxable property in the 1525 Grand Urtager and Area, each year of the control of the State, City, county, school districts of the for the benefit of the state, City, county, school districts of on loans, moneys advanced to or indebtedness, including bonds proposed to be issued by the City to finance projects in such area. Section 2. Definitions. For use within this ordinance the following meanings: "City" shall mean the City of West

"City" shall mean the City of West Des Moines, Iowa. "County" shall mean Polk County,

"City" shall mean the City of West Des Moines, Iowa. "County" shall mean Polk County, lowa. "Urban Renewal Area" shall mean the taxable real property situated in 1525 Grand Urban Renewal Area, the boundaries of which are set out below, such property having been identified in the Urban Renewal Plan approved by the City Council by resolution adopted on March 18, 2019: BEGINNING AT THE SOUTHWEST CORNER OF LOT C MOUNTAIN PLACE, AN OFFICIAL PLAT, NOW INCLUDED IN AND FORMING A PART OF THE CITY OF WEST DES MOINES, POLK COUNTY, IOWA, BEING A POINT ON THE SOUTH RIGHT OF WAY LINE OF GRAND AVENUE AT THE INTERSECTION OF THE SOUTH LINTERSECTION OF THE SOUTH CONTAIN PLACE, TO THE MEDITY LINE OF LOT GRAND AVENUE; RIGHT OF WAY LINE OF GRAND AVENUE; THENCE NORTH ALONG THE WEST LINE OF LOT C MOUNTAIN PLACE OF THE NORTHENES OF AND AVENUE; LINE OF LOT D, MOUNTAIN PLACE NORTH ALONG THE WEST LINE OF LOT GRAND AVENUE; DOT C AND THE NORTH LINE OF GRAND AVENUE, TO THE NORTHENCE NORTH ALONG THE WEST LINE OF LOT C MOUNTAIN PLACE, TO THE NORTHWEST CORNER OF LOT 4, MOUNTAIN PLACE; THENCE NORTH ALONG THE WOST LINE OF LOT T 4, MOUNTAIN PLACE; THENCE NORTH ALONG THE NORTHWEST CORNER OF LOT 4, MOUNTAIN PLACE; THENCE NORTH ALONG THE NORTHWEST CORNER OF LOT 4, MOUNTAIN PLACE; THENCE NORTH ALONG THE NORTHEASTERLY, ALONG THE NORTH ALONG THE NORTHWEST CORNER OF LOT 4, MOUNTAIN PLACE; THENCE NORTH ALONG THE NORTHEASTERLY, ALONG THE NORTH ALONG THE NORTHEASTERLY, ALONG THE NORTH ALONG THE NORTHEAST CORNER OF LOT 5, MOUNTAIN PLACE; NORTHEASTERLY, ALONG THE NORTH ASTERLY, ALONG THE NORTH ASTERLY, ALONG THE, NORTHASTERLY, ALON

PLACE, TO THE NORTHEAST CORNER OF LOT 5, MOUNTAIN PLACE; NORTHEASTERLY, ALONG THE NORTH LINE OF LOT 6, MOUNTAIN PLACE, A DISTANCE OF 64.8 FEET; THENCE SOUTHEASTERLY, TO THENCE SOUTHEASTERLY, TO THENCE SOUTHEASTERLY, TO THENCE SOUTHEASTERLY, TO THENCE THE NORTH LINE OF GRAND AVENUE AND ALSO BEING THE NORTH LINE OF GRAND AVENUE AND ALSO BEING THE NORTH LINE OF GRAND AVENUE AND ALSO BEING CATED 160 FEET SOUTHEAST CATES OF LOT 6, THENCE THE NORTH LINE OF GRAND AVENUE RIGHT OF WAY, ALSO BEING THE NORTH A LINE OF LOT C, MOUNTAIN PLACE, TO THE NORTHALINE CORNER OF LOT C, MOUNTAIN PLACE, TO THE NORTHALST CORNER OF LOT C, MOUNTAIN PLACE, SOUTH, ALONG THE

PLACE; THENCE SOUTH, ALONG THE EAST LINE OF LOT LC, MOUNTAIN PLACE, TO THE SOUTHEAST CORNER OF LOT

April, 2019. Steven K. Gaer, Mayor Attest: Ryan T. Jacobson, City Clerk Read First Time: March 18, 2019. Read Second Time: April 1, 2019

Read First Time: March 18, 2019 Read Second Time: April 1, 2019 ORDINANCE NO. 2354 An Ordinance Providing for the Taxable Property in the 8300 Mills Civic Parkwary Urban Renewal Area, Pursuant to Section 403.19 of the Code of lowa BE IT ENACTED by the members of the City Council of the City of West Des Maines, Iowa: Section 1. Purpose. The purpose of this ordinance is to provide for the division of taxes levied on the taxable property in the 8300 Mills Civic Parkway Urban Renewal Area, each year by and for the benefit of the state, city, county, school districts or other taxing districts after the effective date of this ordinance in order to create a special fund to pay the principal of and interest on loans, moneys advanced to or indebtedness, including bonds proposed to be issued by the City to finance projects in such area. Section 2. Definitions. For use within this ordinance the following terms shall have the following terms shall have the following the taxable real property situated in 8300 Mills Civic Parkway Urban Renewal Area, the boundaries of which are set out below, such property having been identified in the Urban Renewal Area" shall mean the taxable real property situated in 8300 Mills Civic Parkway Urban Renewal Area, the boundaries of which are set out below, such property having been identified in the Urban Renewal Pian approved by the City Councle by resolution adopted on March 18, 2019: Certain real property situated in the City Countly Record the the NORTHWEST CONNER TOF NORTHE AS COUNTY RECORDER'S OFFICE; BLING OF LOT 5, 5, 4, 3, 2, 1 AND LOT C (STREET) OF SAID SUNSET RIDGE AS FILED IN DOLLAS COUNTY RECORDER'S OFFICE; NORTH ALONG THE EAST LINE OF LOTS 5, 4, 3, 2, 1 AND LOT C (STREET) OF SAID SUNSET RIDGE AS FILED IN DOL

(d) as used in this section, the word "faxes" includes, but is not limited to, all levies on an ad valorem basis upon land or real property. Section 4. Repealer. All ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

In conflict with the provisions of this conflict with the provisions of repealed. Section 5. Saving Clause. If any section, provision, or part of this ordinance shall be adjudged invalid or unconstitutional, such adjudication shall not affect the validity of the ordinance as whole or any section, provision or part thereof not adjudged invalid os the ordinance of the adjudged and so the ordinance of the adjudged and part thereof not adjudged invalid os the ordinance of the adjudged and part thereof not adjudged invalid os the ordinance of the adjudged and part thereof not adjudged invalid os the ordinance of the adjudged and part thereof not adjudged part thereof not adjudged and part thereof not adjudged and part thereof not adjudged pa

Attest: Ryan T. Jacobson, City Clerk Read First Time: March 18, 2019 Read Second Time: April 1, 2019

West Des Moines Water Works NOTICE OF PUBLIC HEARING WEST DES MOINES WATER WORKS PUBLIC

West Des Moines Water Works NOTICE OF PUBLIC HEARING WEST DES MOINES WATER WORKS PUBLIC IMPROVEMENT PROJECT BOOSTER PUMP STATION AT MAFFITT LAKE West Des Moines Water Works Project No. 00800-170-18004 Public Hearing on Proposed Contract Documents and Estimated Costs for Improvement: A public hearing will be held by The Board of Trustees of the West Des Moines Water Works on the proposed contract documents (plans, specifications, special provisions and form of contract) and estimated cost for the improvement at its meeting at 4:05 P.M. on Monday, April 15, 2019, in the West Des Moines Fire Station #17 Conference Room, 1401 Railroad Avenue, West Des Moines, Iowa. General Nature of Public Improvement: New pump station for the West Des Moines Water Works including two 40-HP horizontal, end-suction, centrifugal pumps, process piping and valves associated with the pumps, a VFD for each pump, power equipment and materials associated with the pumps, controls equipment, material, and programming, pump inspection and start-up services. New pump station will be installed in an existing pump station building. No buried piping is included, all water and electrical lines needed for connections within the Board of Trustees of the West Des Moines, Iowa. The BoARD OF TRUSTEES WEST DES MOINES WATER WORKS WEST DES MOINES, IOWA Brian Rickert, Chair Josh Heggen, Secretary



Project:Des Moines International Airport<br/>Replacement Passenger Terminal and Enabling Projects Environmental AssessmentMeeting:Public Open HouseDate:May 7, 2019

	Attendee	Organization	Phone	Email Address
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### **Replacement Passenger Terminal and Enabling Projects Environmental Assessment**

**Des Moines International Airport** 

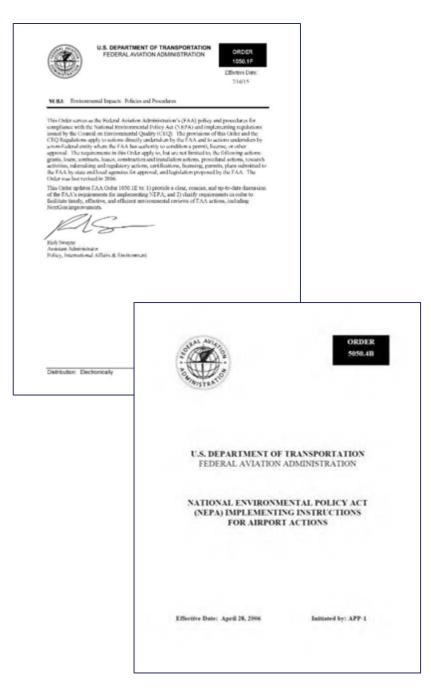
**PUBLIC OPEN HOUSE** 

WELCOME



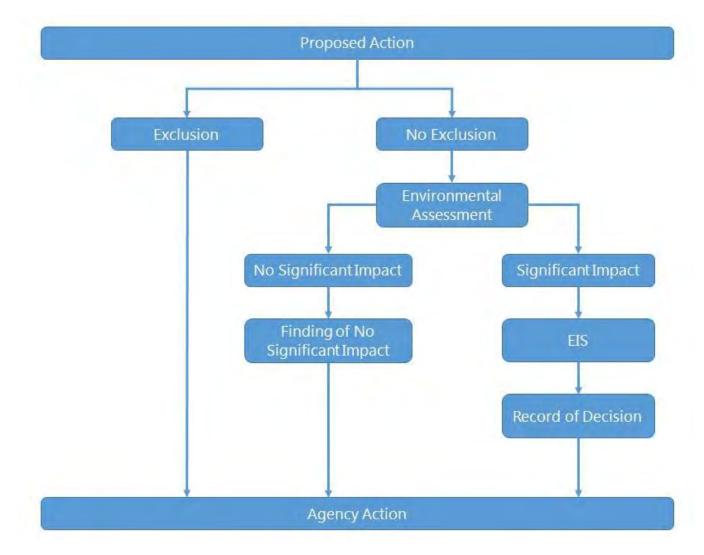
## What is NEPA?

- » NEPA is the National Environmental Policy Act of 1969.
- The Federal Aviation
   Administration (FAA) is the lead agency for aviation-related
   NEPA documentation.
- » All NEPA documentation follows guidance provided in Council on Environmental Quality (CEQ) Regulations and FAA Orders.





## The NEPA Process





## Purpose and Need

- » The Purpose and Need describes the problem and proposed solution
- » Purpose
  - Better meet the needs of the traveling public
- » Need
  - Out-of-Date Infrastructure
    - Built in 1948 and undergone many renovations
    - Inefficient check-in, baggage screening, security, baggage claim, concessions, restrooms, and hold room areas
  - Increase in Number of Passengers
    - Number of passengers forecast to exceed current design capacity of the terminal, front curb, and parking garage structures
  - Separate cargo and commercial aircraft activities
    - Inefficient use of apron area within cargo ramp and with mixed FBO/GA and commercial aircraft activities



## **Proposed Action**

- » Replace the existing passenger terminal building and enabling projects (this includes 21 project components)
  - Project 1: Construction of a replacement passenger terminal building
  - Project 2: Demolition of the existing passenger terminal building
  - Project 3: Construction of a terminal apron with new deicing pad, remain overnight (RON) pad, and relocation of the storm control building
  - Project 4: Construction of an elevated pedestrian bridge

- Project 5: Realignment of the roadway loop/curbside
- Project 6: Construction of a new parking structure
- Project 7: Construction of a new entry plaza to parking
- Project 8: Construction of a new exit plaza from existing parking
- Project 9: Relocation of employee parking



## Proposed Action (continued)

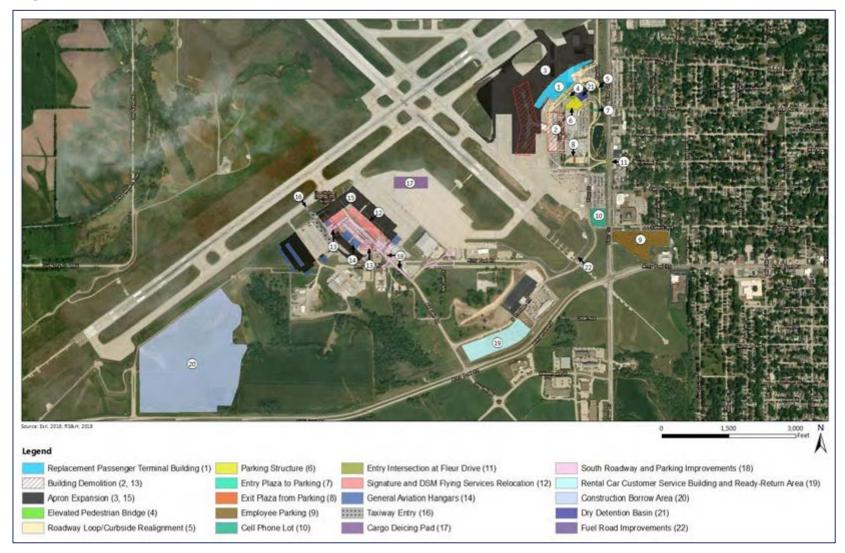
- » Replace the existing terminal building and enabling projects (this includes 21 project components)
  - Project 10: Relocation of the cell phone lot Project 16: Co
  - Project 11: Construction of a new entry intersection at Fleur Drive
  - Project 12: Relocation of Signature and DSM Flying Services
  - Project 13: Demolition of Buildings 34/35
  - Project 14: Construction of general aviation hangars
  - Project 15: Expansion of south apron

- Project 16: Construction of a new taxiway entry
- Project 17: Construction of a new cargo deicing pad
- Project 18: Improvements to south roadways and parking
- Project 19: Construction of new rental car customer service building and rental car ready-return area
- Project 20: Construction of a new dry detention basin
- Project 21: Improvements to Fuel Road<sup>1</sup>

Notes: 1 – Project has been shown to have independent utility from the Proposed Action. Therefore, this project component has been removed from the Proposed Action and analyzed as part of the future airport actions found in Section 4.5, *Cumulative Effects* of the EA. However, this project component is still being shown in the Proposed Action graphic for reference of this project component's location.



## **Proposed Action**





## Alternatives

- » Alternative 1: North Concept Alternative
- » Alternative 2: East Concept Alternative\*
- » Alternative 3: Refurbish Existing Terminal Building Alternative
- » Alternative 4: South Concept Alternative

\*Retained for detailed analysis in EA





## **NEPA Resource Categories**

- » Air Quality
- » Biological Resources
- » Climate
- » Coastal Resources
- » Department of Transportation Act, Section 4(f)
- » Farmlands
- » Hazardous Materials, Solid Waste, and Pollution Prevention

- Historical, Architectural, Archaeological, and Cultural Resources
- Land Use

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- Natural Resources and Energy Supply
  - Noise and Noise-Compatible Land Use
  - Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks
    - Visual Effects
  - Water Resources (including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers)



## Summary of Environmental Findings

- » Air Quality
  - No significant to air quality
  - Implementation of best management practices (BMPs) during construction would reduce emissions
  - Construction emissions would remain below de minimis thresholds
- » Biological Resources
  - No significant impact to biological resources
  - Remove trees between October 31 and April 1, which is outside of the Indiana and the Longeared bat's maternal seasons
- » Climate
  - No significant impact on climate
  - Implementation of BMPs would reduce construction-related emissions

### » Coastal Resources

- No impact to coastal resources
- » Department of Transportation Act, Section 4(f)
  - No impact to Section 4(f) resources
- » Farmlands
  - No impact to farmlands
- » Hazardous Materials, Solid Waste, and Pollution Prevention
  - No significant impact
  - Short-term, temporary increase in the storage and use of hazardous materials during construction
  - Dispose of all hazardous materials in accordance with Federal, state, and other applicable regulations
  - Follow requirements of the National Pollutant Discharge Elimination System (NPDES) permit issued by Iowa Department of Natural Resources (IDNR)



## Summary of Environmental Findings (continued)

- » Historical, Architectural, Archaeological, and Cultural Resources
  - No significant impact to historical, architectural, archaeological, or cultural resources
  - lowa State Historic Preservation Officer (SHPO) concurred that no historic properties will be effected
- » Land Use
  - No impact to land use
- » Natural Resources and Energy Supply
  - No significant impact on natural resources and energy supply
  - Short-term increase in consumable material use during construction

- » Natural Resources and Energy Supply (continued)
  - Proposed replacement terminal building would update and replace older and less energy efficient utilities
  - Sustainable design considerations such as LED lighting, low flow plumbing, and energy efficient appliances
- » Noise and Noise-Compatible Land Use
  - No significant impact to noise or noisecompatible land use



## Summary of Environmental Findings (continued)

- » Socioeconomics, Environmental Justice, and Children's Health and Safety Risks
  - No significant impact on socioeconomics
  - Short-term, temporary increase in traffic from construction-related vehicles
  - No significant impact to any population
  - No significant impact to children's environmental health and safety risks
- » Visual Effects
  - No significant impact to visual effects
- » Water Resources
  - Wetlands:
    - Permanent impact to 0.33-acre of emergent wetlands
    - Prior to construction, 0.33-acre of emergent wetland acre/credits would be purchased, pursuant to the Section 404 permit

- » Water Resources (continued)
  - Floodplains:
    - No impact to floodplains
  - Surface Water and Groundwater:
    - No significant impact on surface water or groundwater
    - Proposed Action includes on-site stormwater management facilities for detention
    - Implement BMPs such as dry swales, bioretention, infiltration, and sheet flow to open space
    - Amend NPDES and update Stormwater Pollution Prevention Plan (SWPPP) to reduce surface water impacts
  - Wild and Scenic Rivers
    - No impact to wild and scenic rivers
- » Cumulative Impacts
  - No cumulative effect when considered with other past, present, and reasonably foreseeable future projects



### How to Provide Comments on the Draft EA

- » Fill out comment card this evening
- » Send written comments via U.S. mail (must be postmarked by Friday, May 10, 2019) or hand deliver written comments by 4:00pm CDT to:

Mr. Bryan Belt Des Moines Airport Authority 5800 Fleur Drive, Suite 207 Des Moines, IA 50321

 » Send written comments via email to <u>bmbelt@dsmairport.com</u> by 4:00pm CDT Friday, May 10, 2019.



### **COMMENT FORM**

### Des Moines International Airport Replacement Passenger Terminal Building and Enabling Projects Draft Environmental Assessment

The Des Moines Airport Autority has prepared a Draft Environmental Assessment (EA) for the construction of a replacement passenger terminal building and enabling projects at Des Moines International Airport, Des Moines, Iowa.

### **Comments:**

### Comments are not limited to this form. Please attach any additional sheets as necessary.

Name:	
Address:	
City, State, Zip:	
Email:	

Be advised that all comments received, including personal identifying information may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

### Comments on the Draft EA will be accepted 35 days after the Notice of Availability.

Written comments may be mailed to Des Moines Airport Authority, Attn. Mr. Bryan Belt at 5800 Fleur Drive, Suite 207, Des Moines, IA 50321. Mailed comments must be postmarked by May 10, 2019. Hand-delivered comments must be received by 4:00pm CDT on May 10, 2019. Written comments may be emailed to bmbelt@dsmairport.com by 4:00pm CDT on Friday, May 10, 2019.