

Item 7: Proposed Mitigation Plan

Item 7 – Proposed Mitigation and Monitoring Plan

Section 1: Mitigation Overview

The Cuyahoga County Airport is improving the Runway Safety Area as required by the FAA. The airport is located in the city of Richmond Heights, Cuyahoga County, Ohio near Cleveland, Ohio, centered at coordinates 41.565667°N, 81.488314°W (see attached Stream Mitigation Plan Vicinity Map). An Environmental Assessment was conducted and a FONSI issued by the FAA which identified the Preferred Alternative (#23). This alternative had the least impact on the environment, including streams and wetlands, and is therefore both the Preferred Design and the Minimal Degradation alternative (see Item 5: Proposed Project Antidegradation Analysis for further discussion).

Construction of the proposed project will result in approximately 820 total linear feet of impact to three ditches on Airport property (see Item 6, Section 2: Alternatives Analysis Mapping for project plans). One stream will be impacted, resulting in a loss of 459 feet. All streams and ditches to be impacted are ephemeral, located within the existing airfield, and receive routine maintenance such as mowing and channelization (see Item 2: Stream and Wetland Impact Tables for further details). This restricts most habitat value and limits potential water quality functions. A total of 2.19 acres of Category 1 emergent wetland will be eliminated due to grading activities and the installation of new drainage systems. All wetlands that will be impacted provide limited habitat value because they are within the airfield and mowed and maintained by the airport personnel.

Mitigation required for stream impacts was determined using a 1.5:1 ratio, ditch impacts using a 1:1 ratio, and wetland impacts using a 1.5:1 ratio. This results in 1,509 feet of stream mitigation and 3.29 acres of wetland mitigation required. The goal of mitigation is to provide a minimum of 1:1 functional replacement, with an adequate margin of safety to reflect anticipated success. Wetland mitigation cannot be completed on-site since it would be considered a wildlife attractant and would be dangerous to the airport function (see FAA advisory Circular No 150/5200-33B dated 8/28/07 if further discussion is necessary). Wetland mitigation is proposed to be completed at the Cherry Valley Mitigation Bank. The project area was reviewed for potential stream mitigation opportunities. Relocation of Stream 4 was considered, and although it is somewhat expensive to install a new culvert under the taxiway to take it west to Stream 7, no other obstacles to this relocation were found. Relocating Stream 4 would provide 1,590 feet of new channel and meet the total stream mitigation needs of the project. The culvert needed to convey the relocated channel under taxiway B would constitute 80 feet of the new length, therefore the actual mitigation credit would be 1,510 feet. A minimum HHEI score of 38, which is the existing score of Stream 4, would be met. This is the highest quality stream to be impacted and would therefore provide the most ecological benefit for relocation as stream mitigation. Relocation of Ditches 3 and 4 were considered, however to the east are FAA comm/electrical lines making this direction technically prohibitive and to the west the elevation change is too significant. Ditch 3 and 4 are 10 feet lower than Ditch 2 making the potential relocation west an uphill battle. Relocation of Ditch 2 was considered, however the ditch begins on airport property, is only 1 foot wide, and the drainage area is so small that it was cost prohibitive to run 1,780 feet to relocate it west to meet with Stream 1 with no discernable ecological benefit. Impacts to water quality as a result of encapsulating Ditches 2, 3, and 4 will be minimized through the use of bioretention.

Section 2: Wetland Mitigation Bank

A total of 3.30 acres of wetland mitigation credits (non-isolated, non-forested) will be purchased from the Cherry Valley Mitigation Bank. Mitigation Banks provide an opportunity to conduct wetland mitigation on a larger scale than permittee-responsible mitigation providing a greater ecological benefit to the watershed. Many existing habitat resources are fragmented in highly populated regions which

limit the functions provided. A reservation of these credits has been made and a copy of the agreement is attached. Cherry Valley serves the Grand River Watershed (HUC 04110004) and the USACE Buffalo District (map attached) and is authorized to sell Category 1 credits within Cuyahoga County, Ohio HUC 04110003 under permit No. 1998-4920040. The 92.5 acre mitigation bank is located west of East Union Road in Ashtabula County, Ohio, 1 mile north of Route 6. Wetland restoration and enhancement has been completed and is now in the 5 year monitoring phase. The site was developed by and will continue to be managed by Wetland Preservation, Ltd. until approved for release by the regulatory agencies. The mitigation bank property will then be donated to the Mt. Pleasant Rod and Gun Club, an Ohio non-profit organization, with a conservation easement maintained in perpetuity by the Grand River Partners, Inc. The mitigation bank contact information is as follows: Wetlands Preservation, Ltd., 150 Hunting Trail, Moreland Hills, Ohio 44022-2546, phone 440-247-1428, contact David Trimble, email dtrimble@ohiowetlands.com.

Section 3: In-Lieu Fee Mitigation

No portion of the mitigation will be completed with In-Lieu Fee.

Section 4: Onsite and Off-Site Permittee-Responsible Mitigation Project

Existing Conditions

The stream mitigation will be completed onsite, within existing Cuyahoga County Airport property. The airport is owned and maintained by the Cuyahoga County Department of Public Works (property map attached). Stream 4 currently flows north into a culvert and under the airfield in a series of drainage conveyances and outlets into Stream 3 on the north side of Taxiway A (plan sheet 15). A segment of Stream 4 is located at coordinates 41.565168°N, 81.483984°W. Stream 4 is a channelized ephemeral stream with buffers of mowed fescue. Stream 4 has approximately 45% silt, 30% cobble, and 25% gravel substrate with the maximum pool depth of 3 inches and width of 4 feet, resulting in a HHEI score of 38 (see Item 3: Waters of the US Delineation Report for photos, HHEI form, stream stats, etc). Stream 4 has no sinuosity, no riparian buffer, and a flat gradient. The drainage area is approximately 0.06 square miles. No fish, salamanders, frogs, or aquatic macroinvertebrates were observed. The stream is located within Mitiwanga silt loam soils (MtA), 0 to 2 percent slopes.

Proposed Conditions

Stream 4 will be relocated to the east to flow into Stream 7 rather than being captured and conveyed in the underground drainage system as originally proposed under the RSA grading plan (see attached Stream Mitigation Plan Aerial Map and plan sheets 71-72). The relocation will be routed under Taxiway B and across existing maintained airfield. Existing stream flow regime, functions, and values will be maintained for Stream 4 although the stream path will be a longer, consist of open channel (daylighting), and will connect directly with a Warm Water Habitat perennial stream (Stream 7). In addition to the existing substrate types, bedrock will likely be encountered. The relocated stream will be outside of the proposed RSA area and is therefore not subject to grade requirements. Relocation of Stream 4 will minimize the direct impacts on Euclid Creek watershed by maintaining existing stream functions on-site and providing some enhancement through day-lighting portions of Stream 4 and providing a narrow native vegetative buffer.

Schedule

The stream relocation would be conducted in Project 4 of the RSA Improvement project, which is scheduled to be implemented in 2018. This will occur after the proposed ditch impacts but concurrently with Stream 4 impacts. Plan sheets 8 to 13 show the proposed sequence of projects to be completed on the airport. The work will begin on the southwest end of the airport and progress toward the northeast end over a period of 3 years.

Grading Plan

Erosion control measures shall be installed as indicated on the attached plans (sheets 15-21) and SWPPP. The soils consist of Mitiwanga silt loam and Udorthents, loamy (Ua) (see attached Soil Map).

Table 1. Soil Properties

Soil Unit	Hydric	Depth to Water Table	Depth to Restrictive Layer	Drainage Class
MtA	no	12 to 30 inches	29 to 30 in, bedrock	Somewhat poorly drained
Ua	no	More than 80 inches	More than 80 inches	Not provided

A length of 459 feet of open channel of Stream 4 will be removed by excavation and reshaping of the airfield to meet the Runway Safety Area requirements and 1,590 feet will be created. The channel width of 4 feet would be maintained with 3:1 side slopes (see attached Exb.1, Relocated Stream 4 CL Profile). The average profile slope will be 0.5%, starting at elevation 869.5 and ending at elevation 855.96. The surrounding land will be cut to an elevation of approximately 862. The stream flow is ephemeral therefore no in-stream structures are proposed.

Planting Plan

The native prairie buffer will be 25 feet wide on each bank. The buffer of the relocated stream will be planted with a basic prairie seed mix. The planting area would cover approximately 1.73 acres. All plant material will be purchased from nurseries certifying native materials of suitable ecoregion. Seed mixes shall be stored and planted according to nursery recommendations. Seed shall be broadcast and cultipacked on tilled soil or installed with a no-till seed drill no more than ¼ inch deep. Erosion control blanket will be installed on all side slopes 3:1 or steeper. No trees or shrubs will be planted because this stream relocation is within the runway protection zone (RPZ) which limits vertical obstructions.

Table 2. Floodplain Seed Mix

Botanical Name	Common Name	Ounces/Acre
Permanent Grasses:		
<i>Andropogon gerardii</i>	Big Bluestem	12.00
<i>Bouteloua curtipendula</i>	Side Oats Grama	16.00
<i>Carex spp.</i>	Prairie Sedge Mix	3.00
<i>Elymus virginicus</i>	Virginia Wild Rye	24.00
<i>Panicum virgatum</i>	Switch Grass	2.50
<i>Schizachyrium scoparium</i>	Little Bluestem	28.00
<i>Sorghastrum nutans</i>	Indian Grass	12.00
	Total	97.50
Temporary Cover:		
<i>Avena sativa</i>	Common Oat	360.00
<i>Lolium multiflorum</i>	Annual Rye	100.00
	Total	460.00
Forbs:		
<i>Asclepias syriaca</i>	Common Milkweed	2.00
<i>Aster novae-angliae</i>	New England Aster	0.50
<i>Chamaecrista fasciculata</i>	Partridge Pea	9.00
<i>Coreopsis tripteris</i>	Tall Coreopsis	3.00
<i>Echinacea purpurea</i>	Broad-Leaved Purple Coneflower	3.50
<i>Helenium autumnale</i>	Sneezeweed	2.50
<i>Helianthus grosseserratus</i>	Saw-Tooth Sunflower	0.50
<i>Monarda fistulosa</i>	Wild Bergamot	1.00



Botanical Name	Common Name	Ounces/Acre
<i>Penstemon digitalis</i>	Foxglove Beard Tongue	1.00
<i>Pycnanthemum virginianum</i>	Common Mountain Mint	1.00
<i>Ratibida pinnata</i>	Yellow Coneflower	5.00
<i>Rudbeckia hirta</i>	Black-Eyed Susan	5.00
<i>Rudbeckia laciniata</i>	Wild Golden Glow	1.00
<i>Rudbeckia subtomentosa</i>	Sweet Black-Eyed Susan	0.50
<i>Senna hebecarpa</i>	Wild Senna	2.25
<i>Solidago rugosa</i>	Rough Goldenrod	0.50
<i>Vernonia spp.</i>	Ironweed (Various Mix)	3.00
Total		41.25

Signs indicating “Mitigation Area, Do Not Mow or Spray” will be placed along the boundary of the buffer area at a spacing of 200 feet.

Maintenance

The stream mitigation buffer will be maintained as needed by airport staff. The surrounding airfield will be mowed to within 25 feet of Stream 4. The mitigation buffer will be subject to woody species removal as needed and annual mowing to reduce weeds. Invasive species may be treated with appropriate herbicide or other approved removal methodology by qualified biologists as part of annual monitoring.

Monitoring Plan

A monitoring report will be submitted by December 31 of each year as indicated by the schedule referenced below. Each monitoring report shall include a project description which includes the USACE and OEPA permit numbers, name and contact information of permittee, land owner, monitoring consultant, and laboratories used, a summary of impacts, goals of mitigation, location description and directions, and specific design elements of the mitigation. The report shall also include dates of monitoring, methods, results, maps, and a discussion or table of whether the performance standards are being met. The report shall also include dates of mitigation construction, results from previous monitoring visits and a discussion of mitigation development over time, maintenance activities conducted, and recommendations for remedial actions.

- Maps – site location, location of sample plots, transects, baseline, or other permanent sampling stations, location of identifying features such as open water, distinct vegetation zones, berms, water control structures
- Field Data Sheets – Latitude and Longitude, dates of inspection, name, title, company of inspector
- Photographs – permanent stations documented from same position and angle each year

The following tables provide the recommended monitoring items and a time scale of when and how often they should occur and be reported during the monitoring period. No water chemistry sampling is recommended since the stream flow is ephemeral however turbidity and evidence of pollution can be demonstrated by the level of substrate embeddedness.

Table 3. On-Site Stream Mitigation Reporting

	Year 1	Year 2	Year 3	Year 4	Year 5
Submit Report	X	X	X	X	X
As Built Drawings	180 days				
VIBI	X		X		X
Photos	X	X	X	X	X
Physical Measurements	X		X		X
Regulatory Site Visit					X

A summary of data collection protocols is provided for guidance. Please refer to the Integrated Wetland Assessment Program, 2004ⁱ and additional referenced documents for complete descriptions of methods and analysis. Monitoring of the mitigation site should occur in a manner that allows the data collected to specifically indicate whether the performance standards and other goals are being met.

- Physical Measurements of stream – bank width, bankfull depth, length, maximum pool depth, riffle depth, velocity
- Substrate development – HHEI form; record types and amount of each substrate represented within the majority of the stream length.
- Vegetation Monitoring – The sampling method for this mitigation will be to use a 10m x 10m module applied in a 20m x 50m layout. If the layout cannot be contained within the stream area due to small size, a 20m x 20m layout or similar will be used. Sample will be located in area representative of site. A table of species, frequency, relative frequency, density, relative density, basal area, relative basal area, and importance values will be generated.
- VIBI –Generate scores and metric summary table, percent cover of unvegetated soil, native species, and invasive species values from vegetation monitoring data. Percent relative cover and average percent relative cover of native species should be calculated. Since invasive species are generally not randomly distributed within a site, in addition to the VIBI analysis discussed above, a site map identifying all areas that are clearly dominated by any invasive species on the Table 3 should be submitted with each monitoring report.
- Miscellaneous observations – Inspect signage, human/animal usage, access, current weather and rainfall, or other relevant information.

Performance Standards

The mitigation will exhibit or exceed the minimum performance standards set forth and will determine completion of the mitigation responsibilities. Habitat types, functions, and values will be evaluated for progress in relation to the mitigation goals.

On-site stream mitigation must meet the following success criteria for at least two consecutive years:

- Develop a minimum 1,510 linear feet of jurisdictional stream channel with a 4 foot wide base that meets a modified Class II primary headwater habitat stream.
- The stream banks above the ordinary high water mark will demonstrate a minimum 70 percent native vegetation cover, and exhibit no more than 10 percent bare ground.
- The site must exhibit no more than 10 percent cover of invasive species listed in Table 4.
- Develop a prairie buffer zone that is a minimum 25 feet on both sides of stream channel covering an area of 1.73 acres.
- Maintain stable profile and cross section; minimal bank slumping, headcutting, undercutting, sloughing, gullies, or other erosional progression over more than 5% of the mitigation area that would jeopardize water quality and stream function.

Table 4 includes all plant species considered to be potential invasive threats within wetlands in Ohio and their associated buffer areas. This table is subject to change as new species are determined to be invasive within the Ohio flora. Eradication of these species should be accomplished as soon as possible once they are identified. In no circumstance shall a predominance of invasive species be more than one continuous acre of areal coverage, even if the overall percent of invasive species is less than ten percent. VIBI field data should be used to demonstrate whether or not this goal is being met. A percent relative cover of *Typha* spp. and a percent relative cover for all other invasive species on the Table 4 list should be calculated. Average percent relative cover for *Typha* spp, and average percent relative cover for all other invasives should also be calculated as a single value.

Table 4. Invasive plant list for Ohio

Scientific Name	Common Name
<i>Acer platanoides</i>	Norway Maple
<i>Ailanthus altissima</i>	Tree-of-Heaven
<i>Alliaria petiolata</i>	Garlic Mustard
<i>Alnus glutinosa</i>	European Alder
<i>Berberis thunbergii</i>	Japanese Barberry
<i>Butomus umbellatus</i>	Flowering-rush
<i>Catalpa speciosa</i>	Northern Catalpa
<i>Celastrus orbiculatus</i>	Asian Bittersweet
<i>Cirsium arvense</i>	Canada Thistle
<i>Conium maculatum</i>	Poison Hemlock
<i>Coronilla varia</i>	Crown Vetch
<i>Dipsacus fullonum</i>	Common Teasel
<i>Dipsacus lacineatus</i>	Cut-leaved Teasel
<i>Elaeagnus angustifolia</i>	Russian Olive
<i>Elaeagnus umbellata</i>	Autumn Olive
<i>Epilobium hirsutum</i>	Hairy Willow-herb
<i>Epilobium parviflorum</i>	Small-flowered Willow-herb
<i>Euonymus alatus</i>	Winged Euonymus
<i>Euonymus fortunei</i>	Wintercreeper
<i>Hydrocharis morsus-ranae</i>	Common Frog-bit
<i>Iris pseudacorus</i>	Yellow Flag
<i>Ligustrum vulgare</i>	Common Privet
<i>Lonicera japonica</i>	Japanese Honeysuckle
<i>Lonicera maackii</i>	Amur Honeysuckle
<i>Lonicera morrowii</i>	Morrow Honeysuckle
<i>Lonicera tartarica</i>	Tartarian Honeysuckle
<i>Lythrum salicaria</i>	Purple Loosestrife
<i>Maclura pomifera</i>	Osage Orange
<i>Microstegium viminium</i>	Japanese Stilt Grass
<i>Myriophyllum spicatum</i>	Eurasian Water-milfoil
<i>Najas Minor</i>	Lesser Naiad
<i>Nasturtium officinale</i>	Watercress
<i>Phalaris arundinacea</i>	Reed Canary Grass
<i>Phragmites australis</i>	Common Reed
<i>Polygonum cuspidatum</i>	Japanese Knotweed
<i>Potamogeton crispus</i>	Curly Pondweed
<i>Pyrus calleryana</i>	Bradford Pear
<i>Ranunculus ficaria</i>	Lesser Celandine
<i>Rhamnus cathartica</i>	Common Buckthorn
<i>Rhamnus frangula</i>	Glossy Buckthorn
<i>Rosa multiflora</i>	Multiflora Rose
<i>Schoenoplectus mucronatus</i>	Bog Bulrush
<i>Sorghum halepense</i>	Johnson Grass
<i>Typha angustifolia</i>	Narrow-Leaved Cattail
<i>Typha x glauca</i>	Hybrid Cattail
<i>Viburnum opulus var. opulus</i>	European Cranberry-Bush
<i>Vinca minor</i>	Periwinkle

Remedial Measures and Adaptive Management Plan

If any success criteria are not met in any year, the cause will be evaluated and maintenance performed as necessary to bring the mitigation into compliance. In the event that the mitigation is not successful after

5 years, a remediation strategy will be developed or additional mitigation will be identified. Cuyahoga County shall be responsible for implementing remedial measures as necessary for all mitigation. These may include grading, supplemental planting, erosion control, and at the very most, relocation of the mitigation site or purchasing credits through the In-Lieu Fee program managed by The Nature Conservancy. In some cases, the mitigation site may only need more time to become successful and additional years of monitoring would be added.

Ownership and Long Term Management

The Cuyahoga County Department of Public Works will maintain ownership of the stream mitigation and will be responsible for long term management.

Cuyahoga County Department of Public Works
2079 East Ninth Street
Cleveland, OH 44115
Phone: 216-348-3800 Phone
Email: Publicworks@cuyahogacounty.us
Contact: Jamal Husani

Maintenance Supervisor of Airport Operations
Cuyahoga County Airport - Robert D. Shea Field
26300 Curtiss Wright Parkway
Cleveland, OH 44143
Phone: 216-289-4111
Email: ccairport@cuyahogacounty.us
Contact: Daniel DiGiammarino

Financial Assurances

The Runway Safety Area Improvement project has been funded through Project 2. The remaining funding is programmed. The RSA project is necessary for the continued operation of the airport and is expected to be completed as specified. The stream mitigation will be constructed concurrently with the RSA project. The airport understands that should the permit conditions be violated, future development projects requiring USACE or OEPA permits may be jeopardized.

Legal Protection

No deed restriction or legal easement is to be placed on the stream mitigation since the property is owned by a government agency and the use of the property is subject to certain governmental regulations pertaining to airport function and safety. Any future impacts to regulated resources on the airport property will be permitted with the required regulatory agencies and mitigated as necessary.

ⁱ Mack, John J. 2004. Integrated Wetland Assessment Program. Part 4: Vegetation Index of Biotic Integrity (VIBI) and Tiered Aquatic Life Uses (TALUs) for Ohio wetlands. Ohio Environmental Protection Agency, Wetland Ecology Group, Division of Surface Water, Columbus, Ohio.

Mack, John J, M. Siobhan Fennessy, Mick Micaccion and Deni Porej. 2004. Standardized monitoring protocols, data analysis and reporting requirements for mitigation wetlands in Ohio, v. 1.0. Ohio EPA Technical Report WET/2004-6. Ohio Environmental Protection Agency, Division of Surface Water, Wetland Ecology Group, Columbus, Ohio

Mack, John J. and Mick Micacchion. 2006. Addendum to: Integrated Wetland Assessment Program. Part 4: Vegetation Index of Biotic Integrity for Ohio wetlands and Part 7: Amphibian Index of Biotic Integrity for Ohio

wetlands. Ohio Environmental Protection Agency, Wetland Ecology Group, Division of Surface Water, Columbus, Ohio

Mack, John J. 2007. Integrated Wetland Assessment Program. Part 9: Field Manual for the Vegetation Index of Biotic Integrity for Wetlands v. 1.4. Ohio EPA Technical Report WET/2007-6. Ohio Environmental Protection Agency, Wetland Ecology Group, Division of Surface Water, Columbus, Ohio.

Item 7: Proposed Mitigation and Monitoring Plan

List of Attachments

Attachment 1; Cherry Valley Mitigation Bank Agreement, service area map

Attachment 2; Airport Property Map

Attachment 3; Stream Mitigation Plan – State Location Map, USGS Map, NWI Map, Soil Map, Aerial Map

Attachment 4; Exb. 1, Relocated Stream 4 CL Profile

Attachment 1; Cherry Valley Mitigation Bank Agreement, service area map

CHERRY VALLEY MITIGATION BANK
WETLAND MITIGATION AGREEMENT

WHEREAS the discharge of dredged or fill material into waters of the United States, including wetlands, is regulated pursuant to Section 404 of the Clean Water Act;

WHEREAS, entities planning to place dredged or fill material into waters of the United States, including wetlands, must comply with standards and conditions imposed by the Army Corps of Engineers (the "CORPS") including, in many cases, the mitigation of wetland impacts;

WHEREAS, efforts to restore and/or enhance wetlands are often most successful when directed toward the establishment of large, varied wetland ecosystems rather than small, isolated wetlands which are often threatened by urban encroachment;

WHEREAS, WETLANDS PRESERVATION, LTD. ("WPL") has established a multi-user wetland mitigation bank which will provide entities with the opportunity to fulfill their obligations to mitigate wetland impacts as required under Section 404 of the Clean Water Act;

WHEREAS, WPL will, for a fee, restore, enhance, and preserve wetlands in the CHERRY VALLEY MITIGATION BANK located in Ashtabula County, Ohio (the "BANK") and these wetlands will be permanently maintained as provide by applicable laws, ordinances, regulations and agreements; and,

WHEREAS, the CORPS has agreed to consider wetlands restored, enhanced, or preserved by WPL to be valuable and appropriate means to fulfill an entity's requirement to mitigate it's wetland impacts.

NOW THEREFORE, Cuyahoga County Airport, Department of Public Works (the "Client") and WPL agree they will comply with the following guidelines and procedures by which the Client will fund, through payment to WPL, the restoration, enhancement, and/or preservation of wetlands in the Grand River Watershed, State of Ohio, which will be permanently maintained and which will serve to mitigate wetland impacts permitted under Section 404 of the Clean Water Act:

I. GENERAL STANDARDS FOR PARTICIPATION

A. Client anticipates the need to withdraw and to fully pay for a minimum of 3.30 acres of wetland mitigation credits. Client agrees that he shall not withdraw the credits (i.e. Shall not commence his regulated activity) sooner than 3/1/2016 (date), which is less than 30 days, X 30-180 days, or greater than 180 days, from the date of execution of this agreement. Client must fund wetland mitigation credits in 0.1-acre increments, with a minimum withdrawal of 0.1 acres. (For example, if Client is obligated to purchase 4.87 acres of wetland mitigation credits for wetland impacts, Client must purchase 4.9 acres of wetland mitigation credits from WPL). Subject to approval of the CORPS, WPL reserves the right to apply Client's payment either to the restoration, enhancement, or preservation of wetlands at the BANK.

B. Due to: the delays often encountered during the Section 404 permit process, the need for WPL to anticipate future credit demand, Clients need to reserve credits early in the Section 404 process, and the importance of initiating and completing WPL's wetland restoration, enhancement and preservation efforts at the BANK, WPL requires that Client pay a deposit of ten percent (10%) of the anticipated purchase price to WPL upon execution of this agreement. Upon such payment, WPL shall reserve the anticipated number of credits to be withdrawn by Client.

C. Client shall submit a Section 404 Permit application as appropriate to his project, and WPL shall earn and retain one percent (1%) of the anticipated purchase price (10% of the reservation payment) per month ("month" is defined as a thirty (30) day period) that WPL holds the anticipated credits in reserve. If the CORPS or Ohio EPA (OEPA) denies Client's request for a

permit for the wetland impact, then upon fifteen (15) days advance written notice to WPL of such event, WPL shall retain the reservation payment for each month the credits have been held in reserve, and WPL shall refund the balance (if any) to the Client. Any partial month shall be rounded up to the next full month. (For example if 103 days have passed since execution of this agreement, and timely receipt of the written notice to WPL has been provided, WPL shall retain 40% of the reservation payment, and refund the reservation payment balance of 60% to Client). If Client terminates this Agreement for any other reason, or if within ten (10) months since execution of this agreement WPL does not receive acceptable notice of the CORPS' issuance of a permit to Client for wetland impacts at the development site identified below, or if Client has not fully paid for the credits held in reserve, then: this agreement shall terminate, WPL shall retain the entire 10% deposit as liquidated damages, and neither party shall have any further obligation to the other. WPL shall remove the credits from reserve and be free to sell these credits to any other Client. WPL will provide written notice of termination of this Agreement to the CORPS. If Client proceeds with the project without appropriate wetland mitigation, Client may be subject to an enforcement action by the CORPS, and/or other federal or state agencies.

Upon approval of the CORPS and OEPA for Clients use of the BANK, and prior to commencement of the regulated activity, Client shall pay WPL the balance due, based upon:

the actual time that has lapsed since execution of this agreement and the earlier of (i) the date Client intends to withdraw credits from the BANK, and commence his regulated activity, as set forth above, or (ii) the actual date the credits are withdrawn from the BANK, or (iii) the actual date the regulated activity is commenced; and,

the greater of (i) the mitigation credits reserved, or (ii) the final determination of the actual number of mitigation credits that Client shall need and provided by WPL (should WPL elect, in its sole discretion, to provide Client more credits than reserved by Client).

The price to be paid shall be determined by applying the applicable time period and number of credits to be purchased, as determined above, to the price per credit acre calculated from the price matrix in effect at the time of the execution of this agreement, attached hereto as Exhibit "A". All deposits paid shall be applied to the final purchase price.

II. OBLIGATIONS OF THE CLIENT

A. Pursuant to the requirements of Section 404 of the Clean Water Act, and the regulations promulgated thereunder, the Client anticipates the need to withdraw a minimum of 3.30 acres of wetland mitigation credits in order to mitigate 2.16 acres of wetland impacts at its Cuyahoga County Airport development Site located in Cuyahoga County, Ohio. In order to mitigate for the impact on wetland resources and to meet the permit requirements established under the Section 404 permit program, the Client hereby commits to provide for the restoration, enhancement, or preservation and maintenance of wetlands as set forth in Section II.B. of this Agreement.

B. Unless either restoration, enhancement, or preservation of wetlands is specifically required by the CORPS in connection with the Section 404 permit process, WPL reserves the right to apply Client's payment to fund the restoration, enhancement and/or preservation of wetlands at the BANK. Except as otherwise provided in Section I of this agreement, the Client hereby agrees to pay to WPL not less than \$ 145,200 in consideration for WPL's restoration, enhancement, or preservation of 3.30 acres of wetland mitigation credits from the BANK. The final price to be determined as provided in Section I of this agreement.

C. The Client and WPL are aware that the Section 404 permit process must be completed by the CORPS and that this Wetland Mitigation Agreement will be used by the CORPS to document the Clients mitigation plan. Upon issuance of CORPS approval to proceed with the wetland impacts, the Client will provide WPL with a copy of the Section 404 permit or other

CORPS' approval to proceed, and shall pay the final balance due as determined above. Upon receipt of final payment WPL will issue a "Certificate of Withdrawal" indicating the actual number of credits withdrawn, in order for client to commence his regulated activity. Until final payment has been received by WPL Client has only reserved his mitigation credits, and may not commence his regulated activity.

D. Client shall have no other obligation or responsibility for future payments for maintenance of the restored, enhanced, or preserved wetland areas.

III. OBLIGATIONS OF WETLANDS PRESERVATION, LTD.

A. WPL has entered into a Mitigation Bank Review Team Agreement ("MBRT Agreement") dated January 18, 2000, which documents the approval of the design and operation of the BANK. WPL will implement and operate the BANK in accordance with the MBRT Agreement.

B. In consideration of the payment of \$ 14,520 by the Client to reserve the wetland mitigation credits (the "Reservation Payment") indicated above, WPL hereby agrees to reserve said credit acres from the BANK for the time period indicated. Upon final payment of the calculated final balance due, WPL shall have sole responsibility to provide for the restoration, enhancement, or preservation, and the monitoring and maintenance of the wetlands as provided herein and in the MBRT Agreement.

C. WPL will provide confirmation to the CORPS of the restoration, enhancement, or preservation of the wetlands created on behalf of the Client. The confirmation will identify the acres of wetlands restored, enhanced, or preserved pursuant to this Agreement. In addition, the CORPS will be supplied with acceptable annual monitoring reports for a minimum of five (5) years, unless the MBRT reduces this period, documenting the continued viability of these wetlands.

D. The Client may submit the executed copy of this agreement to the CORPS to document its commitment to mitigate anticipated wetland impacts.

WETLANDS PRESERVATION, LTD. (WPL)

By: [Signature]

Its: MANAGING MEMBER

Date 11/15/15

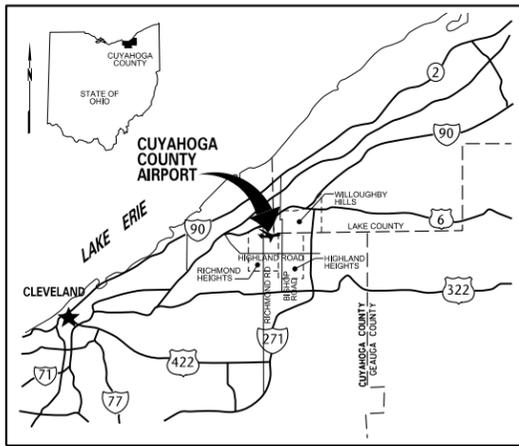
Cuyahoga County Airport, Department of Public Works (CLIENT)

By: Jamal Husani, P.E. Chief Transportation Engineer

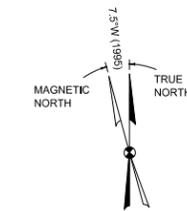
Its: [Signature]

Date 12/10/2015

Attachment 2; Airport Property Map



LOCATION MAP
NOT TO SCALE



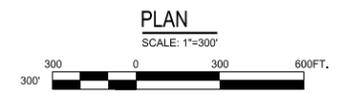
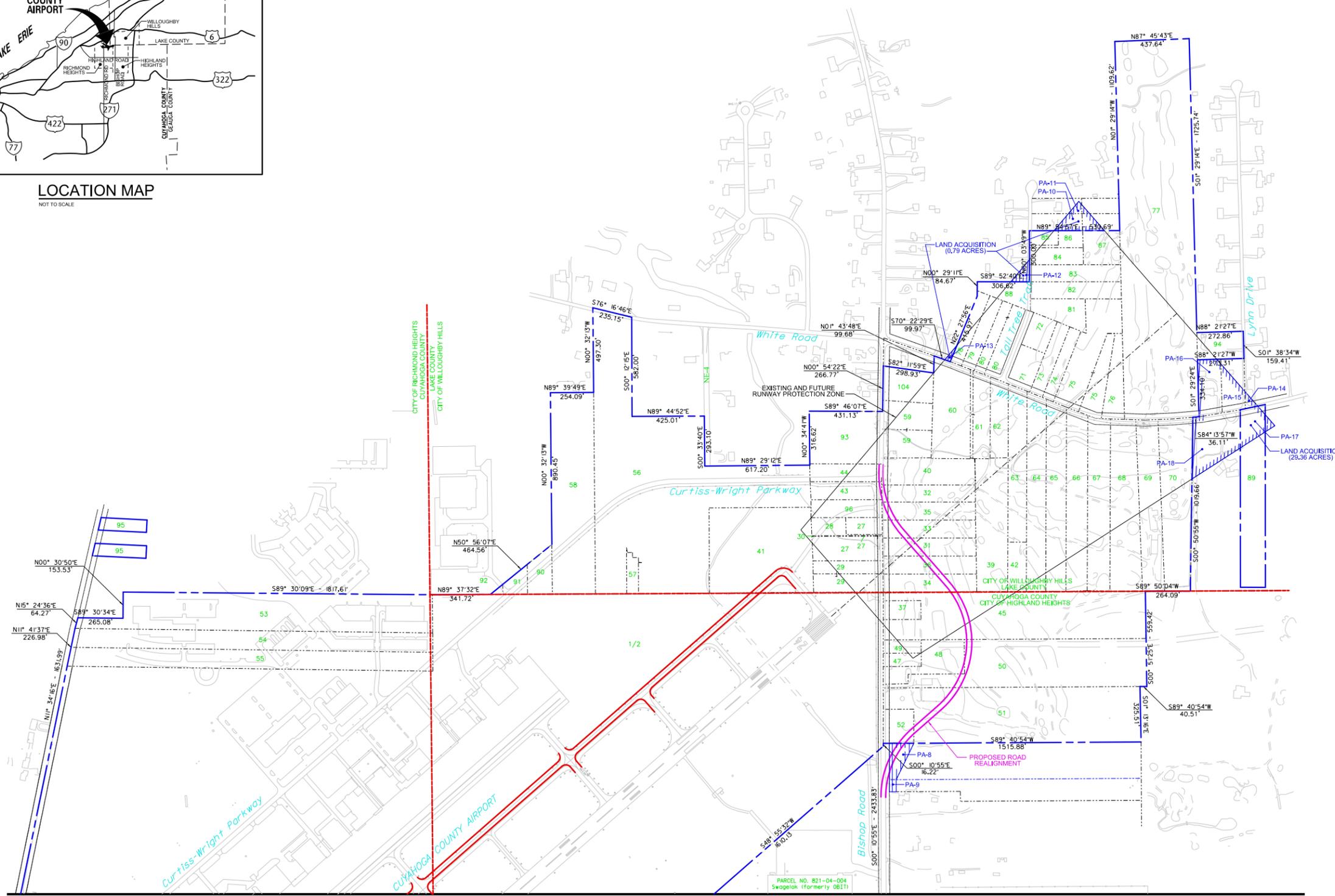
NOTES:

- GEOGRAPHIC COORDINATES REFERRED TO NORTH AMERICAN DATUM OF 1983.

	LATITUDE	LONGITUDE
EXISTING ARP	41°33'54.446"N	81°29'10.884" W
ULTIMATE ARP	41°33'51.557"N	81°29'15.385" W
RW 6 END	41°33'38.073"N	81°29'36.392" W
ULTIMATE RW 6 END	41°33'32.294"N	81°29'45.394" W
RW 24 END	41°34'10.818"N	81°28'45.372" W
ULTIMATE RW 24 END	41°34'10.818"N	81°28'45.372" W
- AIRPORT PROPERTY = 681,278 ACRES
- AIRPORT EASEMENTS= 126,221 ACRES
- GRID IS BASED ON OHIO STATE PLANE COORDINATE SYSTEM, OHIO NORTH ZONE, NAD 83

LEGEND

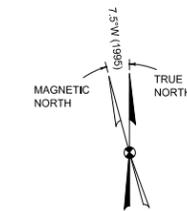
- AIRPORT PROPERTY LINE
- ADJACENT PROPERTY LINE
- LANDS COVERED BY AVIGATION EASEMENT
- LANDS COVERED BY DRAINAGE EASEMENT
- FARM LOT LINE
- PARCEL LINE
- FARM LOT NO.
- EXISTING BUILDING
- EXISTING TREES
- PLANNED LAND ACQUISITION



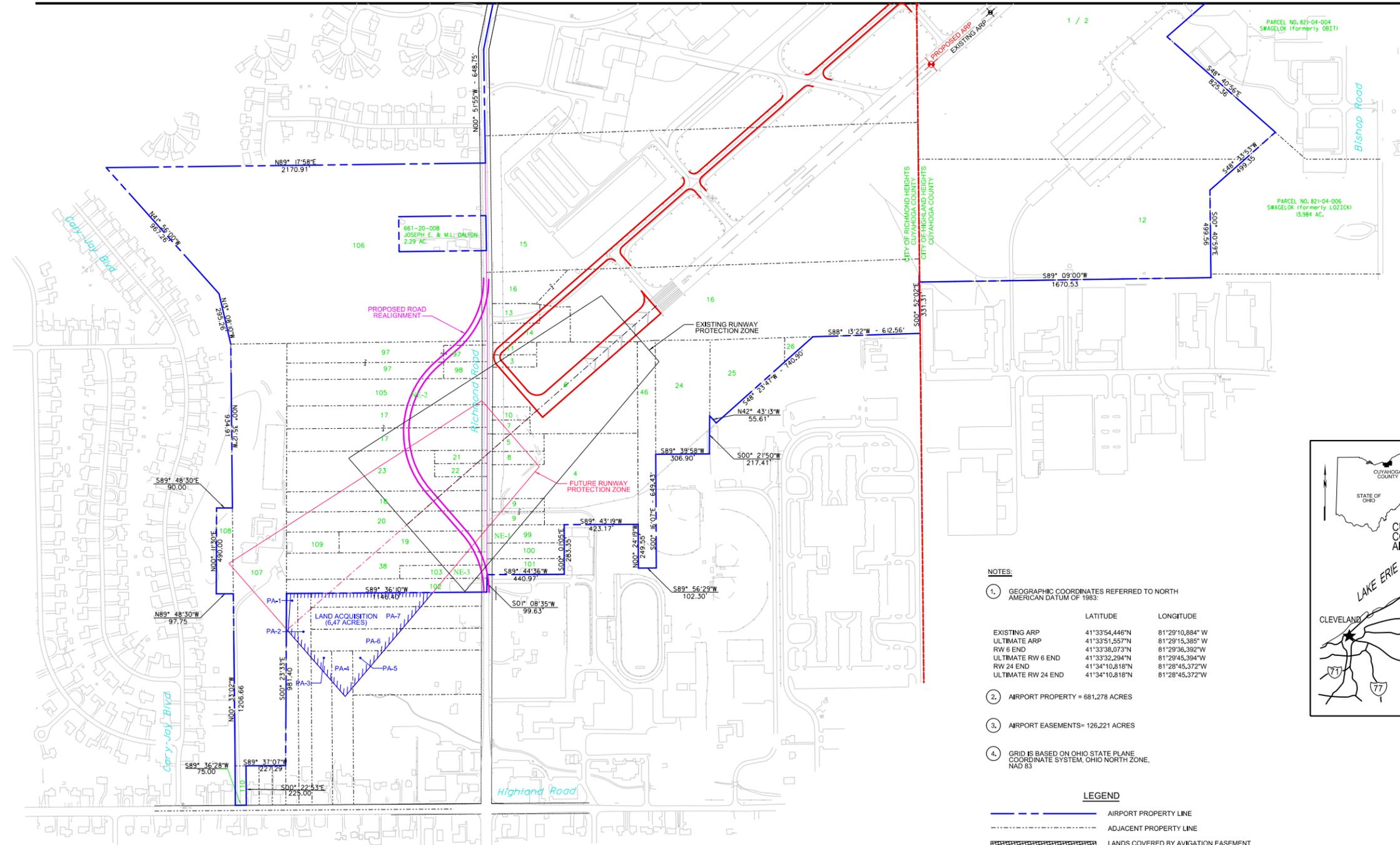
REVISIONS			CUYAHOGA COUNTY AIRPORT	
BY	DATE	CHANGE	CUYAHOGA COUNTY	STATE OF OHIO
			AIRPORT PROPERTY MAP	
DESIGNED: JCT	DRAWN: JCT	SHEET 15 OF 17		
CHECKED: KCK	DATE: MAY 2010			
PROJECT FILE NO.: A27,001,001		CADD FILE NO.: Cuyahoga Property Map		

SOURCE: EXISTING PROPERTY MAP PREPARED BY COLUMBUS ENGINEERING CONSULTANTS, INC., APRIL 2005.

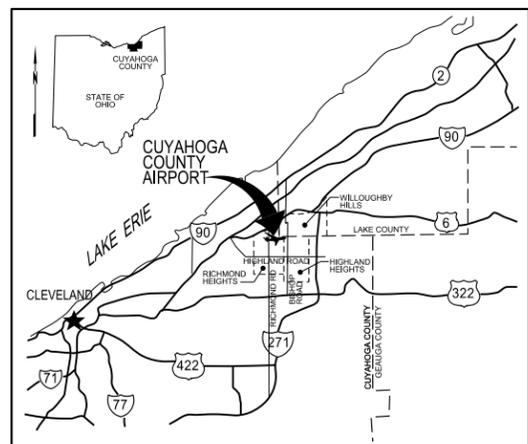




MATCHLINE LINE - SEE SHEET 15 OF 17

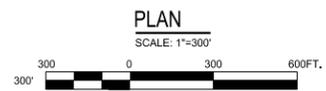


- NOTES:**
- GEOGRAPHIC COORDINATES REFERRED TO NORTH AMERICAN DATUM OF 1983:
- | | LATITUDE | LONGITUDE |
|--------------------|----------------|-----------------|
| EXISTING ARP | 41°33'54.446"N | 81°29'10.884" W |
| ULTIMATE ARP | 41°33'51.557"N | 81°29'15.385" W |
| RW 6 END | 41°33'38.073"N | 81°29'36.392" W |
| ULTIMATE RW 6 END | 41°33'32.294"N | 81°29'45.394" W |
| RW 24 END | 41°34'10.818"N | 81°28'45.372" W |
| ULTIMATE RW 24 END | 41°34'10.818"N | 81°28'45.372" W |
- AIRPORT PROPERTY = 681,278 ACRES
 - AIRPORT EASEMENTS= 126,221 ACRES
 - GRID IS BASED ON OHIO STATE PLANE COORDINATE SYSTEM, OHIO NORTH ZONE, NAD 83



LOCATION MAP
NOT TO SCALE

- LEGEND**
- AIRPORT PROPERTY LINE
 - ADJACENT PROPERTY LINE
 - LANDS COVERED BY AVIGATION EASEMENT
 - LANDS COVERED BY DRAINAGE EASEMENT
 - FARM LOT LINE
 - PARCEL LINE
 - FARM LOT NO.
 - EXISTING BUILDING
 - EXISTING TREES
 - PLANNED LAND ACQUISITION

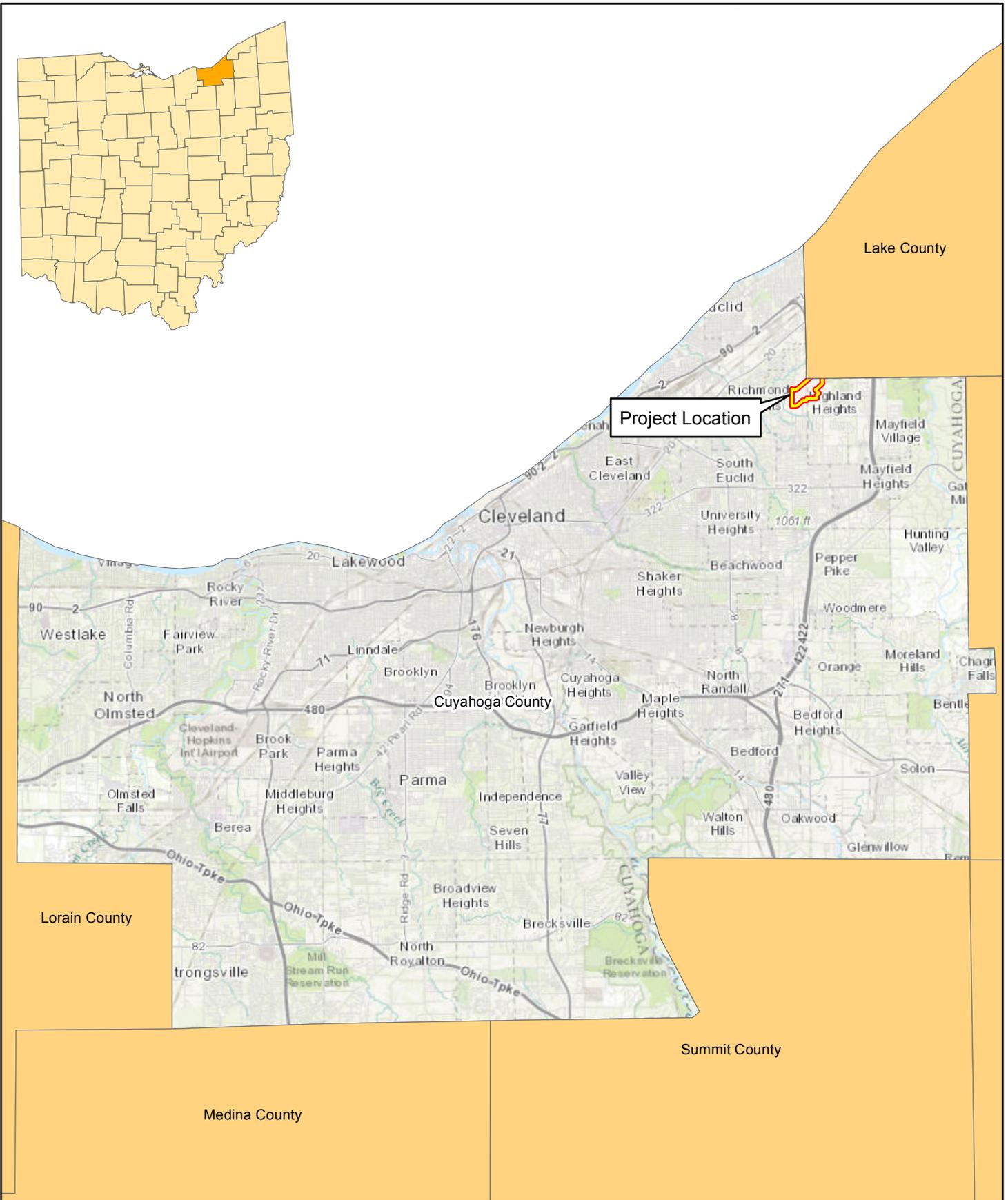


REVISIONS		
BY	DATE	CHANGE

CUYAHOGA COUNTY AIRPORT		
CUYAHOGA COUNTY	STATE OF OHIO	
AIRPORT PROPERTY MAP		
DESIGNED: JCT	DRAWN: JCT	SHEET 16 OF 17
CHECKED: KCK	DATE: MAY 2010	
PROJECT FILE NO.: A27,001,001		CADD FILE NO.: Cuyahoga Property Map

SOURCE: EXISTING PROPERTY MAP PREPARED BY COLUMBUS ENGINEERING CONSULTANTS, INC., APRIL 2005.

Attachment 3; Stream Mitigation Plan - State Location Map, USGS Map, NWI Map, Soil Map, Aerial Map



Project Location

Lake County

Lorain County

Medina County

Summit County

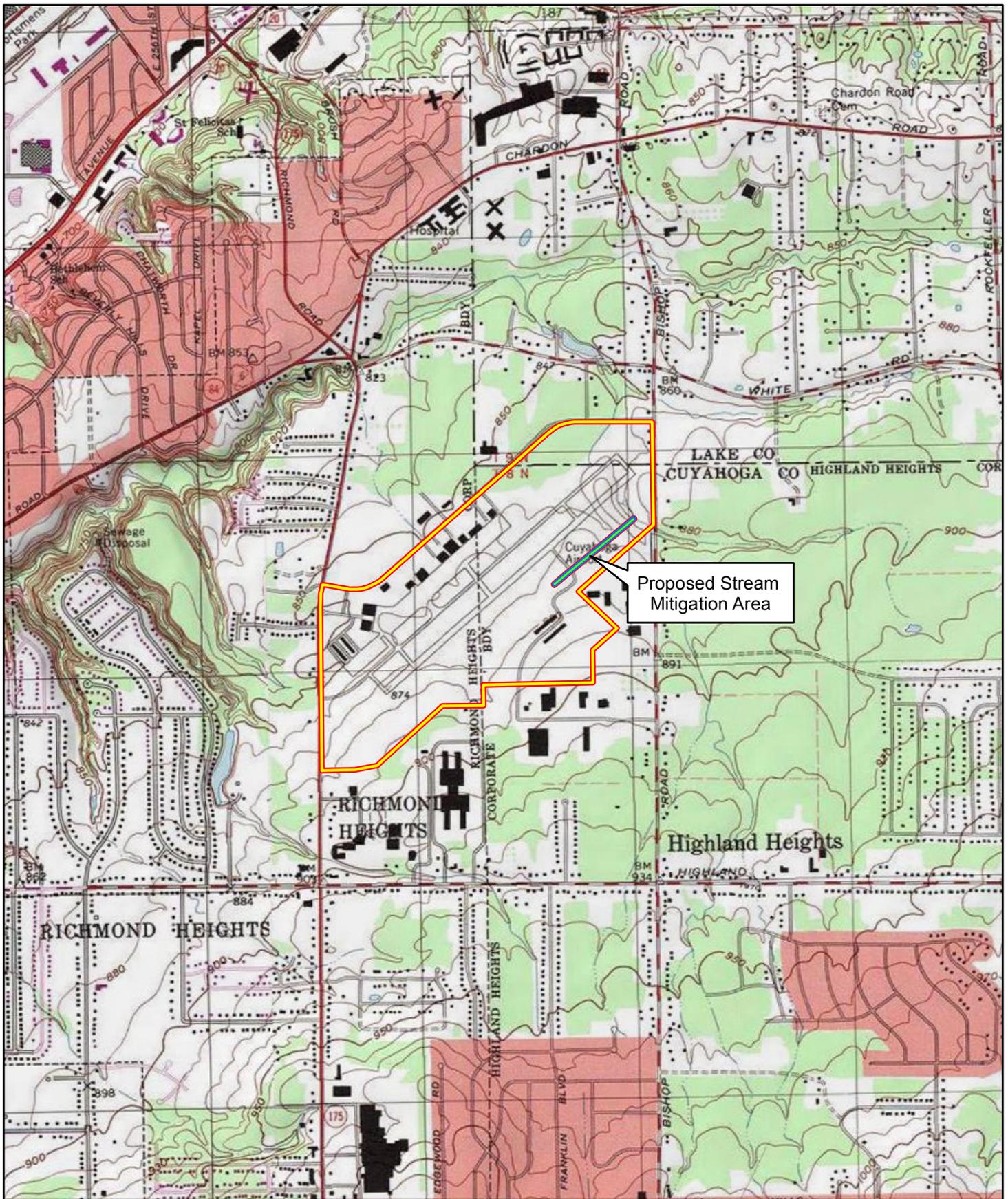


State Location Map
Cuyahoga County Airport
Runway 6/24
Safety Area Improvements - Stream Mitigation
Richmond Heights, Cuyahoga County, Ohio

Scale 1" = 22000'

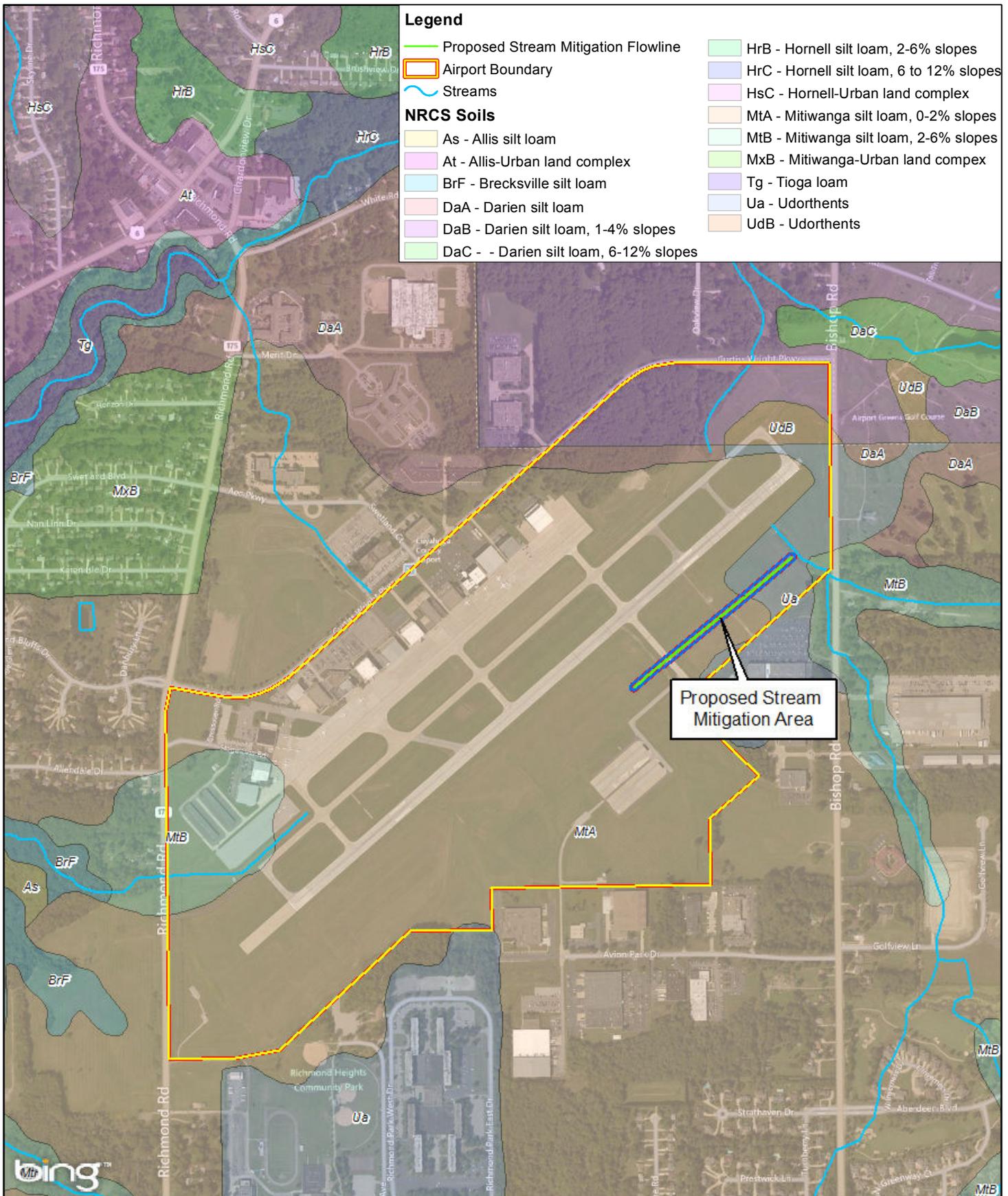
CHA Project No.
27986

County boundaries and transportation network
courtesy of the Indiana Spatial Data Portal



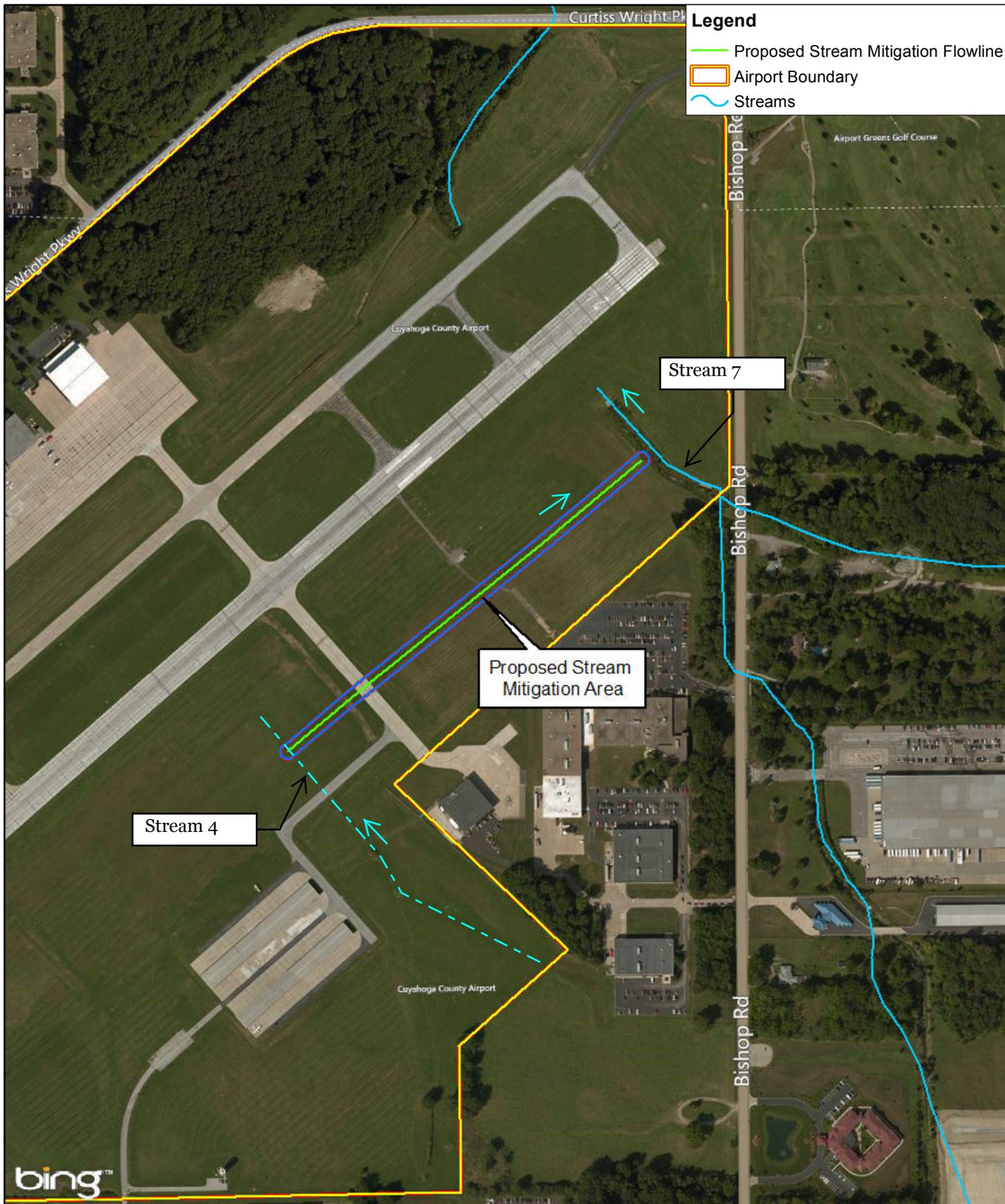
Proposed Stream Mitigation Area

	 design/construction solutions	USGS Topographic Map Cuyahoga County Airport Runway 6/24 Safety Area Improvements - Stream Mitigation Richmond Heights, Cuyahoga County, Ohio	
	0 1,000 2,000  Feet Scale 1" = 2000'	CHA No. 27986	<i>Service Layer Credits:</i> Copyright: © 2013 National Geographic Society, I-cubed Mayfield Heights USGS Quadrangle Date: 1996



Proposed Stream Mitigation Area

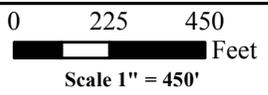
	<p>design/construction solutions</p>		<p align="center">NRCS Soils Map Cuyahoga County Airport Runway 6/24 Safety Area Improvements - Stream Mitigation Richmond Heights, Cuyahoga County, Ohio</p>	
	<p>0 500 1,000 Feet</p> <p>Scale 1" = 1000'</p>	<p>CHA Project No. 27986</p>	<p><i>Image courtesy of USGS Earthstar Geographics SIO © 2015</i> <i>Microsoft Corporation © 2010 NAVTEQ Photo Date: 5/15/2012</i> <i>Soil Data Courtesy of the Natural Resources Conservation Service</i></p>	



bing™



CHA
design/construction solutions



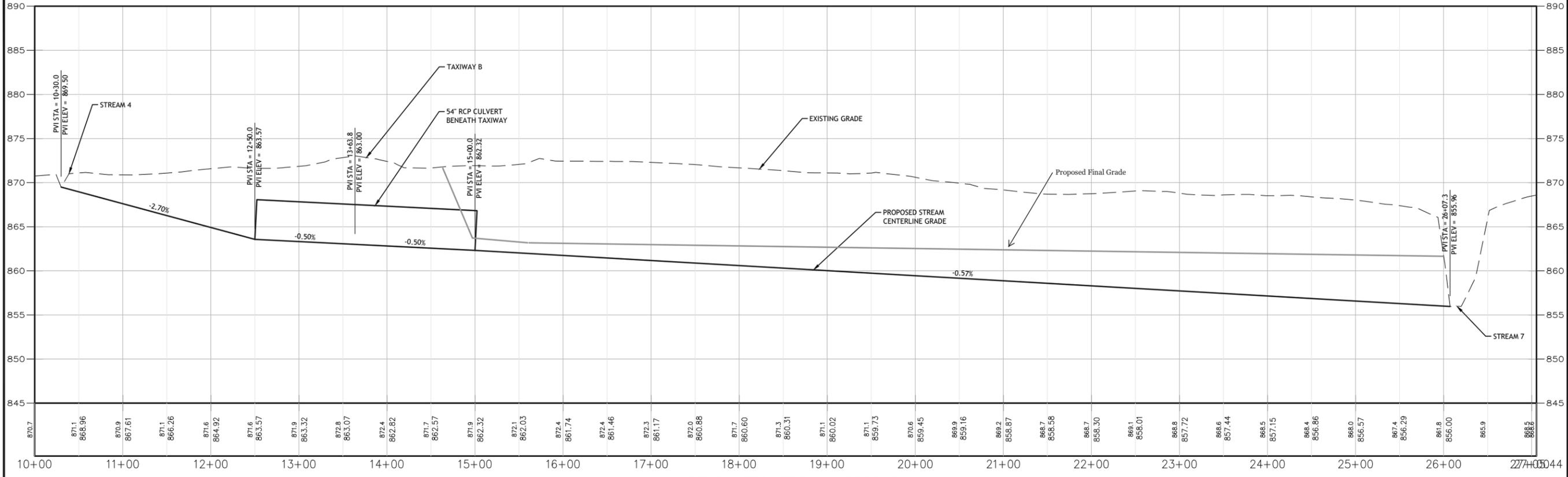
CHA Project No.
27986

Cuyahoga County Airport
Runway 6/24
Safety Area Improvements - Stream Mitigation
Richmond Heights, Cuyahoga County, Ohio

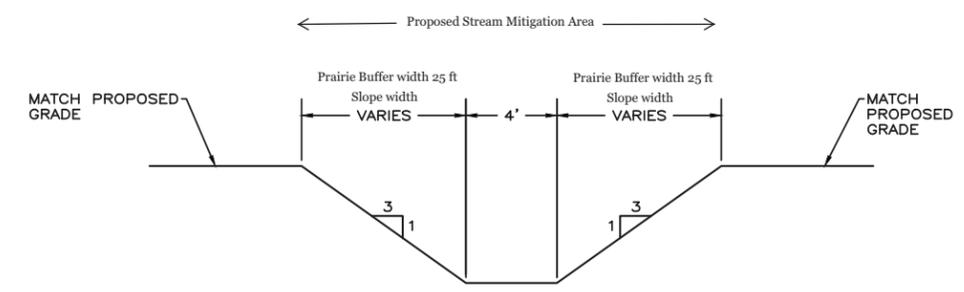
*Image courtesy of USGS Earthstar Geographics SIO © 2015
Microsoft Corporation © 2010 NAVTEQ
Photo Date: 5/15/2012*

Attachment 4; Exb. 1, Relocated Stream 4 CL Profile

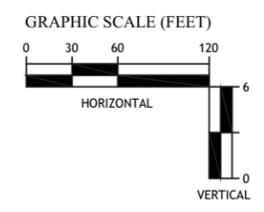
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RELOCATED STREAM 4 PROFILE



RELOCATED STREAM TYPICAL SECTION DETAIL
 NOT TO SCALE



No.	Submittal / Revision	App'd	By	Date

CUYAHOGA COUNTY AIRPORT
 26300 CURTISS WRIGHT PARKWAY
 RICHMOND HEIGHTS, OH 44143

CLWA
 Burke Lakeside Airport
 1501 North Marginal Road, Suite 200
 Cleveland, OH 44114
 Main: (216) 445-1700 • www.clwainc.com

12-4-15
 USING THESE DOCUMENTS FOR CONSTRUCTION SHALL BE AT THE USER'S RISK AND/OR LOCAL LAWS APPLICABLE STATE AND/OR LOCAL LAWS

Designed: DPF | Drawn: DPF | Checked: TAS

CUYAHOGA COUNTY AIRPORT
 RUNWAY 6/24
 SAFETY AREA IMPROVEMENTS
 RELOCATED STREAM 4
 CL PROFILE

Issue Date: MAY 15 | Project No.: 27986 | Scale: AS NOTED

EXB. 1