NEOFIX

Northeast Ohio Flight Information Exchange

Northeast Ohio Flight Information Exchange (NEOFIX): A Public-Private Partnership To Develop Drone Infrastructure For Economic Development, Public Safety Cyber Security And Emergency Preparedness

Tuesday, June 13, 2023, briefing
County Executive – Chris Ronayne
County Council District 2 Dale Miller

Stuart C. Mendel
Project Director

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Briefing Contents

TAB 1   PowerPoint briefing and talking points

- Hyperlinks included

  - https://bw-centers-tech-partnerships.org/neofix/
  - https://richedward.com/portfolio/mworks-commercial-1/
  - www.OH-FIX.com
  - https://oh-fix.com/index.html

TAB 2   Index of stakeholders spreadsheet

TAB 3   Early Draft – second quarter report (incomplete)

TAB 4   Web page content

TAB 5   Challenges

TAB 1

Northeast Ohio Flight Information Exchange (NEOFIX):
A Public-Private Partnership To Develop Drone Infrastructure For Economic Development, Public Safety Cyber Security And Emergency Preparedness
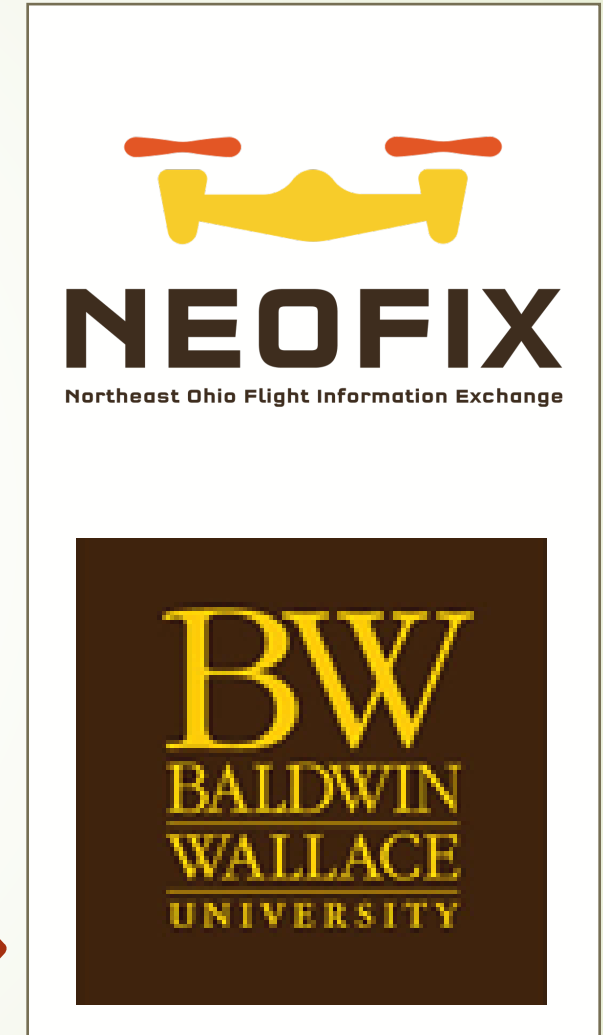
Tuesday, June 13, 2023, briefing attendees:
County Executive – Chris Ronayne
County Council District 2 Dale Miller
Stuart Mendel, Baldwin Wallace University
Stephen Stahl, Baldwin Wallace University

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What is NEOFIX?

- NEOFIX is the instrument for state and local government and public safety agencies to post information for each other and drone operators which keep the airspace open, secure, and safe.
- NEOFIX informs drone operators of ground rules and conditions, local issues and events, public safety incidents, hazards, and sensitive and critical infrastructure: key safety and navigation data.
- NEOFIX allows information sharing in the most open way possible while also respecting operational security, privacy requirements, and public safety, enabling multiple ways to connect and share information via Internet and flight programs.

- https://bw-centers-tech-partnerships.org/neofix/

- https://richedward.com/portfolio/mworks-commercial-1/

- www.OH-FIX.com

- https://oh-fix.com/index.html

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BWU NEOFIX Project Objectives

This project fits within BWU strategic values devising programming that is intentionally excellent, innovative, equitable and inclusive. The NEOFIX is an exciting and valuable fit within BWU's regional impact, awareness and reputation strategic initiative outputs. As a public private partnership this technology partnership is a necessary infrastructure underlying high paying jobs drawing on education , training, manufacturing a design, maintenance technologies, flight operations programs; and public policy development and discourse while also engaging students and faculty of BWU.

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Summary of the Benefits and Capabilities of NEOFIX

- <u>Inexpensive</u> approach to infrastructure for the rapid growth of the drone industry and <u>creation of high paying blue collar and technology derived jobs</u>
- Enables <u>local government</u> the ability to <u>define how drones get integrated</u> into their communities
- Enables safe integration for the space where drones operate (under 1,000 feet)
- Creates public data assets for drones that provides Navigational Aids (NAVAIDS) that the FAA has already stated it will not provide
- Relies on a <u>proven model</u> that accelerates services, industry, and jobs while minimizing cost and risk
- <u>Local and national stakeholder support</u> will <u>attract investment from national drone industry</u> players – discussions underway
- Phased project enables a <u>proven aviation sustainability model</u>
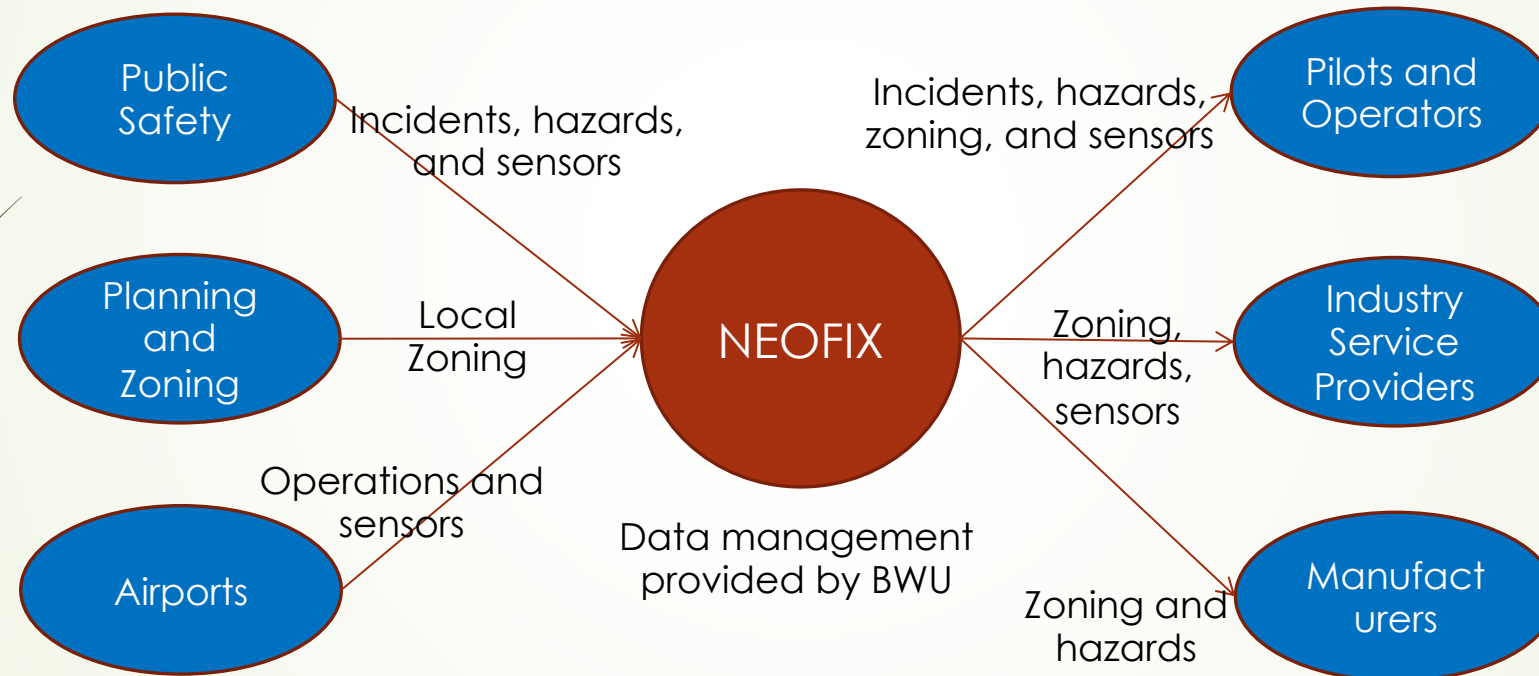
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Why Now?

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Why Cuyahoga County?

- Cuyahoga County can be a leader in the new $3Bn drone industry forecast to grow to over $10Bn in the next five years.
- Experts point to dramatic increases in local drone traffic over the next few years. They also tell us that the #1 factor holding back growth is lack of clarity in usage, public policy, drone manufacturing, repair, maintenance and development.
- Communities that have drone infrastructure first will get the lion's share of investment in infrastructure, education, and jobs: average salary is $58,280/year (ZipRecruiter)
- A safer airspace saves lives and supports public safety; more clarity grows UAS operations resulting in more services and more jobs
- Virginia for example is seeing the fast growth benefits of this model
  - 40+ state and local agencies collaborating to create over 7,000 NAVAIDS
  - 9 of the FAA's 15 approved "USS" providers now operating in Virginia
  - Infrastructure is drawing companies: Silent Falcon, Electra Aero, Raytheon/Collins, Walmart, and more
  - New resident services such as package and medical delivery being created

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NEOFIX – a public private partnership

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NEOFIX Outreach Strategy

ARPA start up funding will set the conditions to for a www and social media presence, and the convening agency of the BWU to create a stakeholder affinity group. Initially this stakeholders will concentration on:

- Public Safety Officials throughout the NEO region, then the state of Ohio and nationally
- Advocate with state legislators to build endorsement and support for the concepts among the public sector departments which rely on Drones such as ODOT and Ohio EPA, ODNR and public works.
- Engage local and regional offices of the Federal Government such as the FAA and NASA.
- Develop support from national stakeholders such as Crown Castle, DroneUp likely to buy into the infrastructure
- Local and regional economic development actors
- As a public private partnership. funding streams will arise through user memberships, project development with third parties

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ARPA FIT

ARPA Goal	NEOFIX Benefit
Support urgent COVID-19 response efforts to continue to decrease spread of the virus and bring the pandemic under control; Direct COVID-19 containment, testing, vaccination, mitigation, medical care and supplies, quarantine facilities, public health surveillance health communication and enforcement in hospitals, clinics, schools, clinics.	NEOFIX provides basic infrastructure for flight planning and operations to support fast developing usage and efficiency for drone delivery of COVID-19 testing kits, medications and other urgent health and medical related transportation uses to underserved communities in Cuyahoga County.
Support immediate economic stabilization for households and businesses.	NEOFIX infrastructure will accelerate development and use of drone services and related jobs as remote pilot, maintenance, and flight operations personnel for workers starting with secondary education. NEOFIX also creates conditions for industry development; early adoption drone policy and education in professional and academic programming; technology innovation through research and development; public-private partnership engagement
Address systemic public health and economic challenges that have contributed to the inequal impact of the pandemic.	Using NEOFIX to develop infrastructure that supports drone delivery of medical services (such as testing and medication) which specifically benefits lower income communities that may not have access to transportation or work flexibility to easily access medical services.
Capital investments in facilities to achieve the above.	NEOFIX will draw on existing "FIX" models to spur additional investment in infrastructure by private entities, including smart cities sensors and drone support facilities.
Water, sewer, and broadband expenditures.	NEOFIX willspur additional investment in infrastructure by public utilities (Northeastern Ohio Regional Sewer District and the Cleveland Metroparks for example), and private entities (drone friendly and familiar business and nonprofit entities) familiar with smart cities sensors and drone support facilities.

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Use-case Opportunities

- Deliver medicine and diagnostic tests to underserved communities within a year
    - Working poor frequently can't access medical services
    - Drones provide a solution to this for certain types of services
    - The technical and regulatory framework to deliver medical services by drone exists **today**
    - With Cleveland Clinic, Metro, and University Hospitals, all you need is the base infrastructure and you will be providing services in 2023
- Use freight drones to deliver large international freight across Lake Erie between Port of Cleveland and Canada – reduce the Friendship and Rainbow Bridge freight bottlenecks
    - Technology is largely ready
    - Vehicles could easily be made in Cleveland
    - Easy to do given geographies and infrastructure
    - Straightforward safety case given geography

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County Funding Stops

Sustainability

Phase I: 2 Years

Phase II: 2 Years

Phase III: Ongoing

Development and Initiation

Year 1
- Establish NEOFIX: 90 days
- Establish Governance: 90 days
- Outreach to: 120 days
  - Communities and agencies to join system
  - Local and regional economic development actors
  - Public Safety Officials throughout the NEO region
  - National stakeholders: 30 days
- Onboarding national stakeholders: 90-120 days
- Loading data and zoning assets to provide navigation to UAS: ongoing
- **County Contribution: $225,000**

Critical Mass and Transition

Year 2
- Deploy initial resident services (medical and package)
- Extend data services, including sensor integration
- Sponsorships
  - Industry
  - Infrastructure Providers
  - Local government
- **County Contribution: $225,000**
- **Stakeholder Contribution: $150,000**

Year 3
- Extend resident services, data, and Stakeholder Partners
- **County Contribution: $0**
- **Stakeholder Contribution: $250,000**

Sustainment and Growth
- Beyond Year 3
- Ongoing local and public safety outreach
- Ongoing infrastructure and data development
- Ongoing systems integration work
- Funding mechanisms
  - Industry User Fees
  - Integration Work
  - Workshops / Governance Support
  - Federally Funded Integration work (DHS – critical infra, CUAS)
- **Stakeholder Contribution: $300-$500,000**

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TAB 2

Institution Affiliation	Name	Email
Aerozone Alliance	Hrishue Mahalaha	hrishuem@inoecp.com
Aloft (B4UFly) (drone operators to check airspace before taking flight now available on mobile and desktop devices)	Jon Hegranes	jon@aloft.ai
Asst. Chief (Ret) Willoughby Fire Dept. Lake County Public Safety UAS Chief Pilot. Unmanned Tactical Group Chief Instructor	Scott Mlakar	scott1445@yahoo.com
ATA, LLc	Scott Drew	sdrew@ata-llc.com
ATA, LLc	John S Eberhardt	jeberhardt@ata-llc.com
AURA Network Systems (Advanced Ultra Reliable Aviation)	Matthew Ziska	mziska@auranetworksystems.com
Baldwin Wallace Dean of Research	Swagata Banik	sbanik@bw.edu
Baldwin Wallace Director of Sponsored Research	Jen Pitz	jpitz@bw.edu
Baldwin Wallace Engineering Department Faculty	Paul Penko	ppenko@bw.edu
Baldwin Wallace Project Director	Stuart Mendel	smendel@bw.edu
Baldwin Wallace Vice President of Operations and President of Cleveland International Air Show	Greg Flanik	GFlanik@bw.edu
Best Autonomous Insights inside Michael Best Consulting	Kyle Snyder	kylesnydernc@gmail.com
CEO at Govtrain Solutions & Optimal Grant Solutions (OGS)	LEONARD BRANHAN	mindsquare6@gmail.com
City of Cleveland	Alan Chonko	achonko@clevelandohio.gov
City of Cleveland Police	Stephan Williams	swilliams@clevelandohio.gov
City of Middleburgh Heights Fire Chief	Braint Gilgas	bgalgas@middleburgheights.com
City of Solon Fire Chief and Regional HAZMAT	Mark Vedder	mvedder@solonohio.org
City of Strongsville Emergency Dispatch	Jeff Branic	jeff.branic@strongsville.org
City of Strongsville Emergency Dispatch	John Bedford	john.bedford@strongsville.org
City of Westlake Police	Edwin (Ted) Morley	tmorley@westlakepolice.us
Cleveland Clinic	Geoff Gates	GATESG@ccf.org
Cleveland Hopkins International Airport	Adam Harvey	aharvey@clevelandairport.com
Cleveland Port Authority	Gutheil, Dave	David.Gutheil@portofcleveland.com
Cleveland State Center for Emergency Preparedness	Bernard B. Becker	ccfdchiefbecker@yahoo.com
Clevleland Hopkins International Airport	Javier Badillo	jbadillo@clevelandairport.com
Collins Aerospace (technologically advanced and intelligent solutions for the global aerospace and defense industry.)	Nick Liberko	nicholas.liberko@collins.com
Commerical Drone Group and NORCODA	Dan Chan	dan@kaizenvillagefoundation.org; dan@commercialdronegroup.com
Consultant with ATA	Tom McMahon	tmcmahon2@gmail.com
Critical Ops	Chelsea Treboniak	chelsea@criticalops.com
Crown Castle	George Kirov	george.kirov@dynamicstrategiesconcepts.com
Crown Castle (nation's largest provider of shared communications infrastructure—cell towers, small cells, fiber—connecting people and businesses)	Nancy Chrisman	Nancy.Chrisman@crowncastle.com
Cuyahoga County - Economic Development	Anthony Stella	astella@cuyahogacounty.us
Cuyahoga County - Emergency Preparedness	Mark Christie	mchristie@cuyahogacounty.us
Cuyahoga County IT Department	Tom Fisher	tpfisher@cuyahogacounty.us
Cuyahoga County Planning	Dan Meany	dmeaney@cuyahogacounty.us
DroneUp (a last-mile delivery system that will not only provide swift and simple local deliveries, but will also be ready to provide critical infrastructure inspections at every corridor)	Matt Beatty	matt.beatty@droneup.com
FAA - retired	Scott Ross	captainscott32@gmail.com

First Comm Cyber Secruity	Rich Dawson	rdawson@firstcomm.com
First Energy Corporation	Melissa Frank	frankm@firstenergycorp.com
G2G Government Relations Consultant	Andrea Harless	aharless@g2gconsulting.com
Iridium (global satellite communications company, providing access to voice and data services anywhere on Earth).	Joe Darden | Iridium	Joseph.Darden@iridium.com
Iris Automation (Creating a Safer Airspace with Collision Avoidance · Aviation safety powered by computer vision · COMMERCIAL DRONE · GROUND BASED · GENERAL AVIATION · UAM / AAM)	Dan O'Shea	daniel.oshea@irisonboard.com
Manufacturing Works	Howard Thompson	howard.thompson@ehmadvisors.com
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Manufacturing Works	Molly Leitner	molly@mfgworkscle.org
Metrohealth	Brandon Cahill	bcahill@metrohealth.org
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Metrohealth	Hubbard, Gabrielle	ghubbard@metrohealth.org
Metroparks	Laura Schuch	lms4@clevelandmetroparks.com
North Coast Drone Alliance (NORDODA)	Chad Hankins	chdhankins@yahoo.com
North East Ohio Sewer District	Freidman, Donna	FriedmanD@neorsd.org
Office of Governor - Northern Ohio Regional DirectorNorthern Ohio Regional Director	Michelle Gillcrist	
Office of Ohio Governor Mike DeWine		
Office of Governor - Senior Advisor for Aerospace and Defense to Ohio Governor, Mike DeWine	Joe Zeis	
Ohio House District 15 - with daughter who is BW MBA Alumni	Richard Dell'Aquila	
OneSky (provider of high-quality commercial aircraft aftermarket parts and services).	Chris Cucera	ckucera@oneskysystems.com
OneSky (enterprise-ready, software platforms use proven, industry-leading analytics to ensure safe, compliant and efficient UAS and UAM)	Mike Tornetta (OneSky)	mtornetta@oneskysystems.com
Pierce Aerospace (evelops Remote ID and Combat ID technology for drones).	Aaron Pierce	aaron@pierceaerospace.net
Raytheon (parent corp of Collins Aerospace)	Joseph d'Hedouville	Joseph.dHedouville@collins.com
Regionerate	Linda Fowler	lindamariefowler@gmail.com
SARA (Pulsed power & directed energy solutions. Overview ; Advanced Perception Threat Awareness.	Jameson Garrett	jgarrett@sara.com
State of Ohio House Chair of Aerospace and Aeronautics	Adam Holmes	Adam.Holmes@ohiohouse.gov
TruWeather (micro weather analytics and technology company with over 35 years' experience deep in aviation, logistics and weather).	Don Berchoff	Don.Berchoff@truweathersolutions.com
V 1 Drone Media	Jason Damman	jason@v1dronemedia.com
Zipline (the world's largest autonomous delivery system, specializing in on-demand drone delivery and instant logistics).	Liam Moran	liam.moran@flyzipline.com

TAB 3

EARLY DRAFT

June 30, 2023

County's address for notification is:
Cuyahoga County Office of the Council
2079 East 9th Street
Cleveland, Ohio 44115
Attention: Cynthia Mason, Research and Policy Analyst

With a copy to:
Cuyahoga County Department of Law
2079 East 9th Street
Cleveland, Ohio 44115
Attention: Director of Law

Dear Ms. Mason,

This document and attached booklet TABS comprise the second quarterly report on the Northeast Ohio Information Exchange: Digital Infrastructure for Drone Services in Cuyahoga County, abbreviated hereafter as the NEOFIX project.

The format narrative of this document is drawn from the reporting items listed in section 4 of the agreement between Cuyahoga County and Baldwin Wallace University for funding the NEOFIX, cut and pasted as:

Recipient shall submit quarterly reports to the Clerk of the Cuyahoga County Council. Reports shall be submitted no later than thirty (30) days after the end of each calendar quarter. In each report, recipient shall provide the following:

1. An itemized list of all expenditures made during the preceding quarter (**see Table I below**).
2. An itemized list of project goals achieved during the preceding quarter; (**see Table II below**).
3. An itemized list of project goals in progress as of the end of the preceding quarter **(see Table II below).**
4. An itemized list of project goals to be completed during the current quarter and an itemized list of project goals to be completed in the next quarter **(see Table III below**).

Summary Narrative

The second quarter report on the progress of the NEOFIX depicts uninterrupted work initially described in the original proposal to the Cuyahoga County District 2 and County Council in Fall 2022 and the first quarter reported submitted this past April.

Briefly, the NEOFIX is a public private partnership, where public sector first-in resources will be amplified well beyond a dollar-for-dollar return for an emerging $10B private industry benefiting residents of the County and the state of Ohio. NEOFIX will provide public safety in Cuyahoga County with a *Common Operating Picture* of drone operations, supporting safe operations and counter-UAS. The NEOFIX puts the County and its airspace within the leading the communities in the nation, applicable as a model program for the state of Ohio.

As a general concept, the first quarter work of the NEOFIX attended on identifying and organizing the stakeholder community. The work of the second quarter is focused on building the NEOFIX instrument. The NEOFIX web interface was made live in the second quarter of 2023 (June 21) and presented to stakeholders for use and refinement. Further buildout for use by private sector corporations, the state of Ohio, residents and other stakeholders will take place in quarters three and four of this calendar year.

Second Quarter Timeline
In the period April through June 2023 content has been steadily increased on the NEOFIX website to deepen its use as a resource for drone use stakeholders in the County and region. The hyperlink is: https://bw-centers-tech-partnerships.org/neofix/ and a subject index of the site content is provided under TAB 3 of this report.

During the second quarter meetings of NEOFIX stakeholders were held on the campus of Baldwin Wallace University April 18 and June 21, with subcommittee meetings on sequential days during the week of May 22. The four subject themes for the working groups were as follows:

1. The Data Sharing / Base Layers Group (County Planning, Emergency Management, First Energy) (will be published as buffered Hazards w/out descriptions to encourage pilots to avoid, but not publish what it is) Hazards / Obstructions (County Planning) Ground Rules (such as the Cleveland takeoff and landing rules) (County Planning, Emergency Management)Public Safety Incident Data – publishing real time incidents that require UAS operators to be aware and avoid for safety or legal reasons
2. The Design and Configuration Group
3. The Sensor Integration and Planning Group
4. The Policy Group

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Second quarter NEOFIX project performance

Goal 1 To form four working subgroups drawn from stakeholders identified during first quarter

Goal 2 To design and build the NEOFIX and accessible to the public.

Goal 3 To begin marketing the NEOFIX setting the conditions for a public private partnership (PPP) regionally and across the state of Ohio

The four groups convened on successive dates and worked on the following respective agenda activities.

1) **The Data Sharing / Base Layers Group**
   a) Lead: Scott Drew
   b) Description: Focus on building on the existing data sharing conversations to get groundspace data into the system – develop the initial set of data layers in NEOFIX specific to Cuyahoga County to support safe and efficient flight operations and FAA approvals of advanced operations
   c) Outcome(s): Identify, collect, and load data form relevant sources in Cuyahoga County to populate the initial system configuration, either through ArcGIS subscription, direct system integration, file data load, or hand creation if needed
      i) Objective 1: A list of data assets and owners
      ii) Objective 2: Load and integrate data into NEOFIX
   d) Standing Agenda: (1 Hour)
      i) Based on the expertise of the people in the group and data shopping list, where do these data assets reside?
      ii) Who owns the policies administratively?
      iii) Who owns the data assets administratively?
      iv) Who owns the data assets physically/technically?
      v) What is required to access them (administrative and technical)?
      vi) What is the next step for access for each listed asset?
      vii) When is the next meeting date for the Data Sharing group?

   NEOFIX Data Asset Shopping List
   - Groundspace configuration data such as hazards, obstacles, and obstructions
     - Geo-buffered sensitive infrastructure (cell towers / power lines / substations) to assist with safe flight operations and compliance with regulations (e.g., infrastructure that would be harmed if a vehicle collided with it)
     - Hazardous ground conditions such as chemical and oil plants and storage facilities
     - Construction cranes
     - Tall (>100') buildings and structures
   - Ground space configuration such as take-off and landing area rules (preferred, notification required, permission required, and prohibited)

- Standing supplemental rules, requirements, or restrictions for take-off and landing on public property such as parks, garages, and schools
- Areas restricted to the public (public safety, city yards, etc.) where a vehicle operators would not normally have access for takeoff and landing outside of an emergency situation.
- Event data
  - Public safety data such as operations and public safety sensitive or restricted areas that are time bound.
  - Access to local 911 Computer Aided Dispatch centers to integrate relevant dispatch calls.
  - Sports schedules
- Sensor data to provide situational awareness of environmental conditions, including weather.
  - Local or municipally owned weather sensors

Advisory Type	Description
State or Local Government Information Advisory	Provide local government a voice for local preferences (e.g., safety in operations over people, privacy, environmental concerns) and provide guidance to industry on conditions that may impact the safety or efficacy of an operation or integration into the community.
Public Safety First Responder Emergency Incident Management Response	(e.g., Fire, Police Operations): Inform operators and the public about an area of Public Safety operations so that private operators can avoid interference with public safety operations— manage flight in the air, deconfliction on the ground, and help with creating a temporary flight advisory (TFA) in the context of a Disaster Response.
Public Safety Hazardous Materials Incident	Inform operators and the public about an area of personal hazard or aircraft contamination risk— manage flight in the air and deconfliction on the ground.
State or Local Agency Site Data Collection	Make the public and UAS operators aware of operations so that we can reduce operational interference which improves safety while also reducing public concerns about the use of the UAS through transparency.
Public Safety Large Audience Event	Provide needed data to UAS operators and USS providers to assist in compliance with Federal Rules about operations over people.
State or Local Government Supplemental Rule Advisory	Denotes a time and location where a Supplemental Rule may be in effect (such as the requirement to notify an agency prior to use of the land)

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Advisory Type	Description
Ground Operations Prohibited	Denotes a time and location where take-off and landing of a UAS are prohibited either due to: i) Public Safety requirements, ii) a political subdivision rule under HB 742, or iii) because the site is closed to the public.
Hazard / Obstruction	Denotes air or ground times and locations that may present a hazard to operators, either because of a physical obstruction on the ground or in the air or a hazardous ground condition.
Planned Flight Operation	Provides notification of a planned Flight Operation area
Ongoing Flight Operation	Provides notification of an ongoing Flight Operation area

- Surveillance information describing objects in the air, including crewed and uncrewed vehicles, and other relevant information, to assist USS/UTM providers managing airspace operations.
  - Access to any existing, available surveillance sensors

2) **The Design and Configuration Group**
   a) Lead: Scott Ross
   b) Description: Identify added guidance and advisories that effectively "design" the preferred and prohibited take off and landing areas, sensitive or critical areas to avoid, and high value / high risk areas where higher surveillance performance is needed to make operations safer, more efficient, and approvable given the groundspace procedural mitigations
   c) Outcome(s): Develop a draft configuration plan including preferred and prohibited ground operations areas, sensitive flight areas, identified areas of air and ground risk and preferred navigational area and potential input on schedules and risk mitigations
      i) Objective 1: Initial ground configuration plans around Cleveland Clinic Administrative Campus and Cleveland Lakefront
      ii) Objective 2: Draft outline for risk mitigation strategy
   d) Agenda: (1 Hour)
      i) Identify contemplated Phase 1 operations
      ii) Identification of preferred, prohibited, and sensitive ground areas in the proposed operating areas
      iii) Identification of sensitive or higher risk air operating areas
      iv) What are the next steps for developing a regional risk mitigation strategy?

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v) When is the next meeting date for the Design group?

3) **The Sensor Integration and Planning Group**
   a) Lead: John Eberhardt and Kyle Snyder
   b) Description: use the use cases and work from the Design and Configuration Group to identify sensor needs and build out an MVI deployment plan and support direct sensor integration into NEOFIX to meet the needs identified in the risk mitigation plan
   c) Outcome(s): Based on the groundspace data (Data Sharing) and configuration (Design) develop a set of proposed phased incremental rollouts of sensor infrastructure in the NEOFIX area
      i) Objective 1: Proposed ground sensor coverage map, by area and modality, for Cleveland Clinic Administrative Campus and Cleveland Lakefront
      ii) Objective 2: Initial proposed Performance Baseline given risk mitigation strategy
   d) Agenda: (1 Hour)
      i) What are the operational risks associated with the proposed operations based on the Risk Mitigation?
      ii) What can we observe about the Ground Risk based on the Risk Mitigation?
      iii) What types of ground-based infrastructure support operational goals and risk mitigation?
      iv) What specific service volume(s) can we identify? What services may be necessary in these volumes?
      v) What performance baseline metrics should we build to?
      vi) When is the next meeting date for the Integration and Planning group?

   As we consider our service volumes, we can assign:

   - Tier 1 provides position, awareness and environmental services at the lowest Performance level, for a combination of lower risk, lower density service volumes and operations;
   - Tier 2 provides position, awareness and environmental services at a mid-Tier Performance level, for medium level risk, medium density service volumes and operations or for areas where a medium risk operation occurs in a low risk service volume;
   - Tier 3 provides position, awareness and environmental services at a high Performance level, commensurate with current General Aviation services, intended to support medium or high risk operations in a high risk volume, such as adjacent to a General Aviation airport or over an urban core where the risk of injury is greater

4) The Policy Group
   a) Lead: Stuart Mendel
   b) Description: Identify, understand and review relevant policies at the local, state, and Federal level and identify any recommendations or observations for discussion at the regional level.
   c) Outcome(s): An inventory of relevant policies and recommendations for local / regional government to discuss
      i) Objective 1: An inventory of policies
      ii) Objective 2: Proposals for regional stakeholders
   d) Agenda: (1 Hour)
      i) What relevant policies can we identify at the local, state, and federal level (in that order)?
      ii) How are these policies relevant to our region and our stakeholders?
      iii) What policies and policy recommendations do we need to explore?
      iv) When is the next meeting date for the Integration and Planning group?

1. Additional activities held in for May Advanced Air Mobility with Kent State University College of Aeronautics and Manufacturing Works: 'Reaching New Heights' program and ecosystem development.

2. Preparation for presence at the Cleveland National Airshow.

3. Feasibility for state of Ohio capital budget funding for sensors.

Progress toward NEOFIX goals are reported in the following Tables.

Table I. Itemized list of all expenditures made during the preceding quarter.

Budgeted and Expense items First Quarter thru 06/30/2023

Line Item		Annual Budget	Actual	Notes
Program Development Expenses		$105,000	$50,500	Salary/fringe
Technical / Software		$ 75,000	$75,000	ATA
Stakeholder Outreach		$ 19,500	$15,000	EHM, Vaux
Data Governance		$ 0	$ 0	contributed
Use Case Development		$ 25,000	$ 8,120	Critical Ops, Food, travel
Total Direct Costs		$224,500	$148,620	

Table II. An itemized list of project goals to be completed during the second quarter and an itemized list of project goals to be completed in the third quarter.

Second Quarter	Goals/Action
April	1. Commence collaboration with interested partners to facilitate turn up and deployment of new public safety and commercial industry drone services 2. Third User Group Meeting (April 12) 3. Start collecting and mapping data assets 4. Initial NEOFIX System Standup for Testing 5. Approve Production NEOFIX 6. Finalize and approve initial data mappings and supplemental language 1. Guidance for identifying and describing data
May	2. Initial data integrations to capture digital infrastructure data and sensor / tools integrations. 3. Establish data security model documentation. 4. Establish API credentials 5. Load initial production data 6. Complete onboarding initial USS/UTM partners
June	1. Fourth User Group Meeting to Deploy Production NEOFIX 2. Stablish processes for work listed below for July and August (third quarter).

Table III Third quarter performance goals

Third Quarter	Goals/Action
July	1. Timely response to technical support and technical inquiries 2. Maintenance of new requirements and features 3. Successful provision of API access as needed 4. Hosting of NEOFIX with support during regular business hours 5. Ability to train new users 6. Ability to connect (onboard) USS/UTM providers and critical infrastructure providers 7. Provision of data governance manuals and guidance materials 8. Successful loading of data into the platform; and 9. Support for user group meetings.
August	1. Secure County Funding for year 2 operations 2. Submit proposal for sensors and other capital equipment 3. Create user-fee model for fiscal sustainability of the NEOFIX
September	1. Monthly user group meeting 2. Ongoing Onboarding of USS/UTM partners 3. Ongoing onboarding of BW partner agency systems 4. Continued collection, mapping and loading of data assets 5. Review, extend, update and maintain data mapping

Table III

NEOFIX
Northeast Ohio Flight Information Exchange

Fourth Quarter	
Monthly Thereafter	Monthly User Group Meeting Ongoing Onboarding of USS/UTM Partners Ongoing onboarding of BW partner agency systems Continued collection, mapping, and loading of data assets. Review, extend, updated and maintain data mappings and supplemental language.
Quarterly Thereafter	System Maintenance and Ongoing Security Compliance Minimum quarterly release of updated application and new features

Respectfully submitted,

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Director, Research and Sponsored Programs

Stuart C Mendel
Affiliate Professor and Project Director

TAB 4

Technology Partnerships Initiative | Baldwin Wallace University

NEWS POSTS
September 2022 – June 2023

Public Safety Drones Market Report Includes Dynamics, Products, and Application 2023 – 2032
06/10/23
https://bw-centers-tech-partnerships.org/public-safety-drones-market-report-includes-dynamics-products-and-application-2023-2032/

Drones on the front lines in public safety operations
06/08/23
https://bw-centers-tech-partnerships.org/drones-on-the-front-lines-in-public-safety-operations/

Time to revisit use of drones by law enforcement when public safety is at stake
06/05/23
https://bw-centers-tech-partnerships.org/time-to-revisit-use-of-drones-by-law-enforcement-when-public-safety-is-at-stake/

Allen County, Ohio, to Purchase Public Safety Drone
06/02/23
https://bw-centers-tech-partnerships.org/allen-county-ohio-to-purchase-public-safety-drone/

Emergency Management Drones: What are they, what do they do?
05/30/23
https://bw-centers-tech-partnerships.org/emergency-management-drones-what-are-they-what-do-they-do/

NASA Deploys PC-12 For Advanced Air Mobility Trials
05/22/23
https://bw-centers-tech-partnerships.org/nasa-deploys-pc-12-for-advanced-air-mobility-trials/

NEOFIX

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CAL Analytics to Provide Uncrewed Traffic Management Services to State of Ohio
05/18/23
https://bw-centers-tech-partnerships.org/cal-analytics-to-provide-uncrewed-traffic-management-services-to-state-of-ohio/

Mission Possible: Taking the Drone Economy to New Heights in Northeast Ohio
05/16/23
https://bw-centers-tech-partnerships.org/mission-possible-taking-the-drone-economy-to-new-heights-in-northeast-ohio/

Walmart Partner DroneUp Pushes to Enhance Drone Flight Safety
05/13/23
https://bw-centers-tech-partnerships.org/walmart-partner-droneup-pushes-to-enhance-drone-flight-safety/

Aloft UTM Launches Air Boss
05/10/23
https://bw-centers-tech-partnerships.org/aloft-utm-launches-air-boss/

Can You Zone Drone Use?
05/01/23
https://bw-centers-tech-partnerships.org/can-you-zone-drone-use/

Drone Industry in the US: An Overview of a Game-Changer
04/28/23
https://bw-centers-tech-partnerships.org/drone-industry-in-the-us-an-overview-of-a-game-changer/

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UAV Manufacturing in the US – Employment Statistics 2005–2029
04/25/23
https://bw-centers-tech-partnerships.org/uav-manufacturing-in-the-us-employment-statistics-2005-2029/

Drone market outlook in 2023: industry growth trends, market stats and forecast
04/22/23
https://bw-centers-tech-partnerships.org/drone-market-outlook-in-2023-industry-growth-trends-market-stats-and-forecast/

Job Growth in the Drone Industry
04/19/23
https://bw-centers-tech-partnerships.org/job-growth-in-the-drone-industry/

Agriculture Drone Software Market Research Report 2023-2033 Market R & D
04/11/23
https://bw-centers-tech-partnerships.org/agriculture-drone-software-market-research-report-2023-2033-market-r-d/

NIMBUS receives $2M to advance drones' role in climate change research
04/06/23
https://bw-centers-tech-partnerships.org/nimbus-receives-2m-to-advance-drones-role-in-climate-change-research/

Drone Sensors Market to Reach USD 2,391.5 million by 2032
04/03/23
https://bw-centers-tech-partnerships.org/drone-sensors-market-to-reach-usd-2391-5-million-by-2032/

US Needs Improved Regulation to Foster Drone R&D
03/30/23
https://bw-centers-tech-partnerships.org/us-needs-improved-regulation-to-foster-drone-research-and-development/

Ohio House aviation committee seeks to help state soar
03/18/23
https://bw-centers-tech-partnerships.org/ohio-house-aviation-committee-seeks-to-help-state-soar/

Manufacturing Works Programs and Events | March 2023
03/01/23
https://bw-centers-tech-partnerships.org/manufacturing-works-programs-and-events-march-2023/

NEOFIX Featured in North Coast Drone Alliance News
02/23/23
https://bw-centers-tech-partnerships.org/neofix-featured-norcoda-news-022323/

The State of the Drone Industry | Drone Industry Insights
02/17/23
https://bw-centers-tech-partnerships.org/state-of-drone-industry-2022-021623/

Air Traffic Control for Drones – Run by Computers | NoCamels Israeli Innovation News
02/14/23
https://bw-centers-tech-partnerships.org/air-traffic-control-for-drones-run-by-computers/

How a Drone from a Tampa Walmart Makes Deliveries | Tampa Bay Times
02/14/23
https://bw-centers-tech-partnerships.org/how-drone-from-tampa-walmart-makes-deliveries/

Drone Prepared | February 10, 2023
02/14/23
https://bw-centers-tech-partnerships.org/drone-prepared-021023/

6 Barriers to Drone Adoption in Public Safety & Emergency Services and How to Overcome Them
02/09/23
https://bw-centers-tech-partnerships.org/6-barriers-drone-adoption-public-safety-emergency/

Ohio: The Birthplace of Aviation
01/23/23
https://bw-centers-tech-partnerships.org/ohio-birthplace-aviation-drone-industry/

FAA Unmanned Aircraft System Traffic Management Concept of Operations
10/19/22
https://bw-centers-tech-partnerships.org/faa-unmanned-aircraft-system-traffic-management/

The Technology Partnerships Initiative at BW
09/29/22
https://bw-centers-tech-partnerships.org/technology-partnerships-initiative-bwu/

NEOFIX: A Partnership to Develop Drone Infrastructure
09/29/22
https://bw-centers-tech-partnerships.org/neofix-partnership-drone-infrastructure/

Critical Infrastructure Modernization Forum
09/29/22
https://bw-centers-tech-partnerships.org/critical-infrastructure-modernization-forum-092022/

BW Faculty Connections with the Technology Partnerships Initiative
09/29/22
https://bw-centers-tech-partnerships.org/bwu-faculty-connections-with-the-technology-partnerships-initiative/

EVENTS POSTS
September 2022 – June 2023

June 21, 2023 | Uncrewed Aerial System (UAS) Operators and Industry Stakeholder Engagement
https://bw-centers-tech-partnerships.org/event-june-21-2023-uncrewed-aerial-system-uas-operators-and-industry-stakeholder-engagement/

May Virtual Meetings (NEOFIX)
https://bw-centers-tech-partnerships.org/may-virtual-meetings-neofix/

May 16-17, 2023 | Ohio Global Aerospace Summit
https://bw-centers-tech-partnerships.org/event-may-16-17-2023-ohio-global-aerospace-summit/

May 2, 2023 | Reaching New Heights in Advanced Air Mobility (AAM)
https://bw-centers-tech-partnerships.org/event-may-2-2023-reaching-new-heights-in-advanced-air-mobility-aam/

April 29, 2023 | Drone Safety Day
https://bw-centers-tech-partnerships.org/event-april-29-2023-drone-safety-day/

April 29, 2023 | Young Eagles Rally, EAA Chapter 1252
https://bw-centers-tech-partnerships.org/event-april-29-2023-young-eagles-rally-eaa-chapter-1252/

NEOFIX
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April 12, 2023 | Uncrewed Aerial System (UAS) Operators and Industry Stakeholder Engagement
https://bw-centers-tech-partnerships.org/event-april-12-2023-uncrewed-aerial-system-uas-operators-and-industry-stakeholder-engagement-2/

March 8, 2023 | Uncrewed Aerial System (UAS) Operators and Industry Stakeholder Engagement
https://bw-centers-tech-partnerships.org/event-march-8-2023-uncrewed-aerial-system-uas-operators-and-industry-stakeholder-engagement/

February 8, 2023 | Uncrewed Aerial System (UAS) Operators and Industry Stakeholder Engagement
https://bw-centers-tech-partnerships.org/uas-operators-industry-stakeholder-engagement/

TAB 5

Challenges check list

1. Funding Continuity
   (Timing can't be interrupted by gap in funding,
   which must come from State and Federal sources)

2. Public Policy regarding drone operations
   a. Municipal
   b. Regionally
   c. Statewide
   d. FAA approval

3. Funding fee mechanism

4. Additional Use-cases

5. Industry build-up

6. Cooperation amongst stakeholders

7. Multi-state collaboration agreements

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