Planning and Development Services of Kenton County

Completed Drone Projects

Flight Totals
(May 2017 - April 2019)

Total Flight Hours - 32.2

Total Distance Flown - 189.6 miles

Total Flights - 203

Additional Flight Statistics
(May 2017 - April 2019)

Total Minutes Flown - 1,934

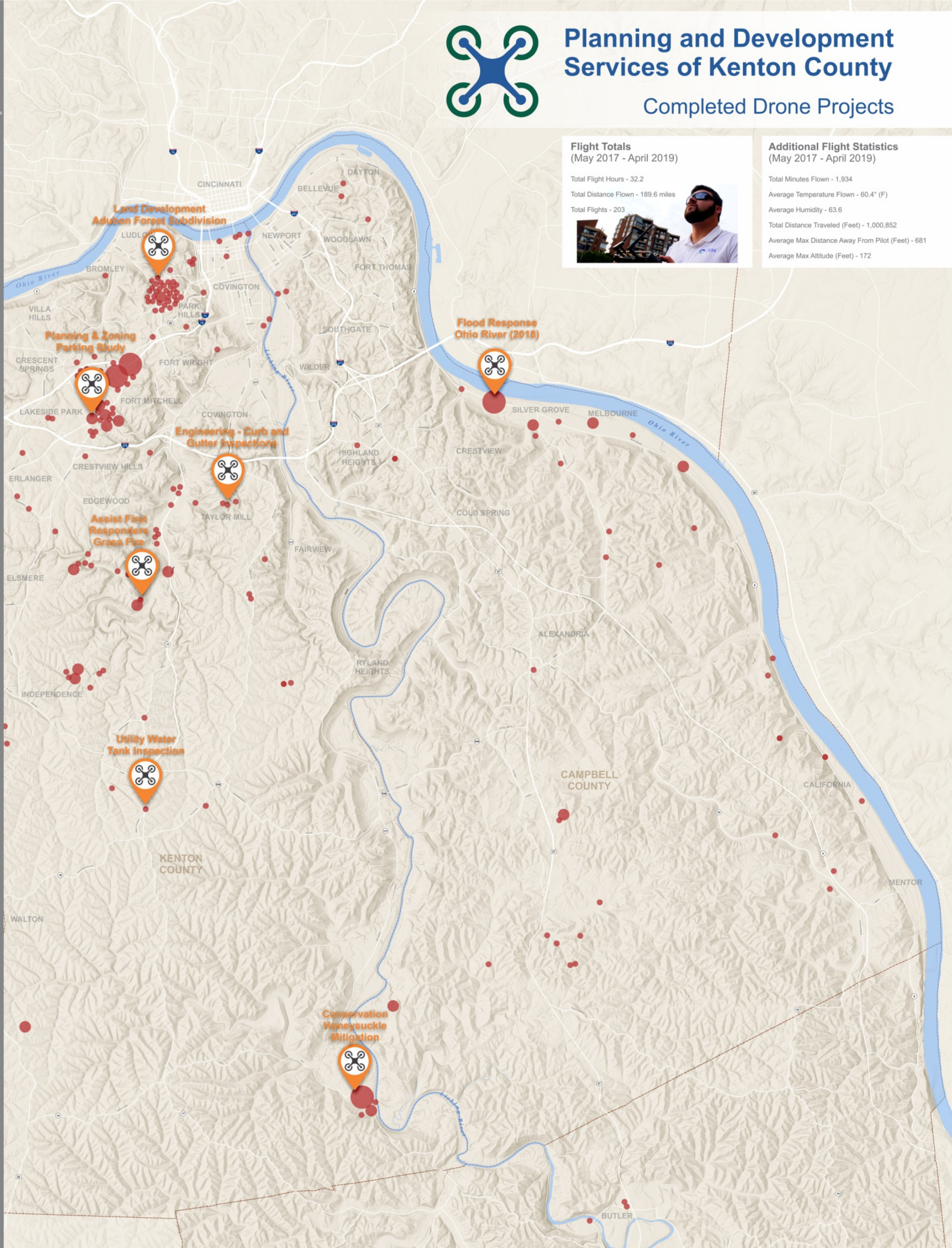
Average Temperature Flown - 60.4° (F)

Average Humidity - 63.6

Total Distance Traveled (Feet) - 1,000,852

Average Max Distance Away From Pilot (Feet) - 681

Average Max Altitude (Feet) - 172



Land Development
Adubon Forest Subdivision
Planning & Zoning
Parking Study
Flood Response
Ohio River (2018)
Engineering - Curb and
Gutter Inspections
Assist First
Responders
Grass Fire
Utility Water
Tank Inspection
Conservation
Honeysuckle
Mitigation
Pendleton County
Courthouse Roof
CINCINNATI
BELLEVUE
DAYTON
NEWPORT
WOODLAWN
LUDLOW
BROMLEY
COVINGTON
FORT THOMAS
VILLA HILLS
PARK HILLS
SOUTHGATE
CRESCENT SPRINGS
FORT WRIGHT
WILDER
LAKESIDE PARK
FORT MITCHELL
COVINGTON
SILVER GROVE
MELBOURNE
HIGHLAND HEIGHTS
CRESTVIEW
CRESTVIEW HILLS
ERLANGER
EDGEWOOD
TAYLOR MILL
COLD SPRING
FAIRVIEW
ELSMERE
ALEXANDRIA
RYLAND HEIGHTS
INDEPENDENCE
CAMPBELL COUNTY
CALIFORNIA
KENTON COUNTY
MENTOR
WALTON
BUTLER
PENDLETON COUNTY
Ohio River
Licking River

Featured Drone Projects

Land Development - Adubon Forest Subdivision

For this project, the PDS drone was used in collecting daily footage of a 17-acre residential development that requires hilltop removal using 'cut and fill' techniques. Cut and fill is the construction method of removing dirt from the top of a hill and filling in the valley below to create a smoother surface on which to develop.

Capturing this process provides continuous updates on project status as well as documenting the necessary steps taken to ensure sustainability.

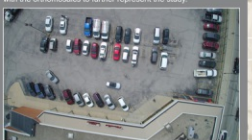
The drone also captured orthomosaics showing over time how the earth and topography changed. During the course of six months (June to November 2018) nearly 26 feet of hilltop was removed and used to fill 30 feet of creek bed.

Planning & Zoning - Parking Study

Fort Mitchell asked Planning and Development Services of Kenton County to identify the needs and usage of the parking lots in the downtown business district.

Rather than using teams of people to walk the parking lots and physically count cars, the drone was used to gather aerial photos at certain times throughout the day. These images give planners more accurate parking counts, and visual representation and data from which they can use to analyze more efficiently.

Digital Surface Models (DSM) were also collected in conjunction with the orthomosaics to further represent the study.



Flood Response - Ohio River (2018)

In February of 2018 the Ohio River and its tributaries rose 34 feet above its normal water level resulting in the highest flood level Cincinnati and Northern Kentucky has seen in over 20 years.

PDS' drone inspected inaccessible houses to determine occupancy while also documenting flood levels to better understand future flood events and response efforts. This technical assistance, and the associated data, resulted in an increase to the United States Geological Survey (USGS) grant budget by $18,000 for stream mitigation.

Engineering - Curb and Gutter Inspection

As one of the first major projects, the drone was tasked with monitoring the effectiveness and deterioration of several newly created road curbs and gutters. This project took place in August of 2017.

A redesigned curb and new concrete formula established by the new subdivision regulations gave cause to see how daily use and elements would affect the integrity of the structure.

The drone was used to quickly and efficiently capture miles of fresh pavement to gather a baseline for further study on the deterioration. Over the course of two months 11 streets were captured.

Assist First Responders - Grass Fire

In March of 2018, first responders were called to a grass fire along an isolated area of railroad track. The fire, thought to be caused by sparks from a locked-up wheel bearing, stretched along 2,300 feet of track. In total, seven fire departments and several public works departments responded from two counties.

With limited access points and difficult terrain, the movements of workers and resources were slow. The drone was used to assist first responders in detection of possible flare-ups. By flying above the response area, the drone is capable of quickly getting from one end of the scene to the other, allowing first responders to keep fighting the fire effectively.

Images, videos, and orthomosaics were captured to give a detailed incident after-action report.

Utilities - Water Tank Inspections

Traditional water tank inspections take a two-person team around four hours to complete and require safety harnesses to climb to the top of the 150-foot towers.

Drone inspections have been conducted lasting only 10 to 15 minutes. Not only did the drone inspection save time and money, it added an element of safety by keeping human inspectors safely on the ground.

Conservation - Kenton County

Honeysuckle is an invasive plant species that can choke out native ground fauna and upset the local ecosystem. Conservation crews use several methods to help mitigate the spread of honeysuckle. The drone is used to identify areas where honeysuckle persists as well as document the mitigation process.

Drone footage captured before and after visuals to help tell the story of the land transformation.

Government Operations - Falmouth Historic Courthouse

While staff mapped school buildings in Pendleton County the Judge-Executive asked if the drone could capture several images of Pendleton County's historic courthouse. While reviewing images and videos, staff noticed a small discolored area on the roof. Further investigation revealed the roof was missing shingles in an area not visible from any roof hatch or surrounding building.

Had this not been found, there is no telling how much damage could have accrued from rain water leaking in over future months.

NKYmapLAB

May 2019 Volume 5: Map 2

PDS Drone Projects

- Drone Flight < ½ mile
- Drone Flight ½ mile - 1 mile
- Drone Flight > 1 mile
- Featured Drone Project

Locator Map

PDS

NKYmapLAB Awards

2018 KY GIS Map Gallery · 2017 KY GIS Story Map · 2017 ESRI UC Story Map · 2016 KY GIS Map Gallery · 2016 KY-APA Outstanding Tech · 2015 KY GIS Map Gallery · 2015 ESRI UC Map Gallery

Featured Data Sources

www.linkgis.org

www.pdskc.org

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direction 2030

Your Voice. Your Choice.

Goals and Objectives

C Community Identity	H Health	N Natural Systems
E Economy	HC Healthy Communities	Primary Goal
G Governance	M Mobility	Secondary Goal

How Does This Topic Apply to Direction 2030?

G **Encourage cooperative governance.**

E Identify opportunities for effective sharing of services.

G **Encourage cooperative governance.**

E Continue to encourage the sharing of technical tools and resources effectively reducing the cost of the system.

URISA Exemplary System in Government Award (2018)

Single Process System Categroy - "Systems in this category are outstanding and working examples of applying information system technology to automate a specific single process or operation involving one department or sub-unit of an agency. The system application results in extended and/or improved government services that are more efficient and/or save money."