

Buttermilk Pike - Orphanage Road Realignment

Story Maps

GIS ROI

- Fort Mitchell Mayor Jude Hehman

"The Buttermilk/Orphanage story map project that PDS built for us was a key tool in documenting the issues that we face on a daily basis in our community as it relates to traffic and safety. It also documented testimonials from adjacent business owners regarding the effect of traffic backups on their business. When every community around the state is competing for prime tax dollars for infrastructure, we used the story map as a crucial tool to visually document the problems and make a case for our project. This effort enabled us to **receive \$250,000 from the Kentucky state legislature** to pursue a study and design of the roadway to improve efficiency."

Story Map

Fort Mitchell, Kentucky

NKYmapLAB

May 2016 Volume 2: Special Edition

Northern Kentucky mapLAB is a copyrighted, published product of Planning and Development Services of Kenton County. The goal of the initiative is to analyze a wide variety of public data and present them in a more visual format that facilitates understanding by the public and its elected leaders. Suggestions for future analyses are always welcome.

Featured Data Sources
www.direction2030.org
www.linkgis.org
www.oki.org
www.esri.com

@NKYmapLAB

NKYmapLAB Awards

2016 KYAPA Innovative Tech
2015 KY GIS Map Gallery
2015 ESRI UC Map Gallery

Buttermilk-Orphanage Intersection (and surrounding 1/2 mile)

This Story Map will highlight the current conditions surrounding the US 25 and KY 371 Intersection. This offset intersection includes portions of Buttermilk Pike, Dixie Highway, and Orphanage Road. Situated in the City of Fort Mitchell, this intersection currently serves as one of the vibrant and historic commercial hubs for the Northern Kentucky region.

Buttermilk-Orphanage Intersection (and surrounding 1/2 mile)

Traffic Conditions (Video)
This brief video footage (1:31) documents the traffic congestion issues that typically occur in the morning and in the evening. This footage was captured on-site in December 2015 and January 2016. It also offers a brief narrative outlining the current congestion issues at this intersection.

Emergency Vehicle Traffic
Another video (2:00) is available here that shows actual footage of emergency vehicles fighting their way through light traffic congestion at this intersection. This footage was captured during non-peak traffic hours, but still demonstrates the difficulty of navigating this intersection.

Kenton County Transportation Plan
The Kenton County Transportation Plan is a comprehensive, multi-modal strategy for improving transportation in Kenton County. It includes a demonstration element for testing transportation improvements with the county's future land use. The plan accounts for the importance of transportation in sustaining economic growth and enhancing the quality of life.

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Existing Conditions
Congestion
• Old Regional Traffic Demand Model forecasts the Level of Service for Orphanage to worsen from "F" to "E" Buttermilk Pike from "F" to "D", and US 25 to this segment to remain "F" in 2040.
• Vehicle traveling east and westbound on KY 371 block US 25 intersections causing motorists in all directions to be "trapped" and unable to proceed within a traffic signal cycle.
Safety
• The Critical Crash Rate for Orphanage Road exceeds state average. In 2010, a pedestrian was struck and suffered injuries at the Orphanage Road intersection.
Land Use/Transportation/Environmental
• This location boasts one of Northern Kentucky's most vibrant and historic commercial hubs.
• Numerous business driveways exist in extremely close proximity to both US 25 intersections.
• Future commercial growth at 1-717/75 and KY 17 may add additional traffic volume to KY 371.
• Diversify housing options exist from single family to multi-family, rental properties.
Multi-modal
• US 25 carries TANK's most heavily used fixed bus route (1) with stops within this project area.
• Spatiotemporal congestion at both KY 371 intersections at US 25. There are no dedicated bicycle facilities. The Old Blue Route Guide recommends use with Caution for Buttermilk and Dixie, however Orphanage Road is not recommended for Bikes to travel.

Buttermilk-Orphanage Intersection (and surrounding 1/2 mile)

Safety
During the planning period 2010 to 2040, a safety challenge will present itself in a magnitude not seen previously in the OK region: the older driver. More than 40,000 persons aged 65 and older are projected to populate the region in 2040, compared with 26,000 in 2010, and will constitute roughly one-fifth of the population of drivers age in the OK region. Nationally and locally, crash data analysis indicates that the **older driver** is more frequently involved in right-angle crashes and/or crashes at intersections compared to the general driving population. Furthermore, drivers 65 and older are at greater risk for more severe crashes due to bodily injury.
According to demographic estimates for the 1/2 mile around the intersection, 12.3% of the population are over the age of 65. According to estimates, these numbers will increase to 15.6% of the population for the same area by 2020.
For a more detailed report of demographics click [here](#)

Buttermilk-Orphanage Intersection (and surrounding 1/2 mile)

Population Characteristics
The chart on the right shows the three primary demographic profiles of the "tapstry segments" living in this study area 1/2 mile from intersection.
• Heartland Communities - 16% (ESRI Segment 18)
• Old and Newcomers - 57% (ESRI Segment 38)
• In Style - 27% (ESRI Segment 17)
ESRI Tapstry Segments help describe a population's lifestyle choices, consumer preferences, and how they spend their free time. ESRI Tapstry Segments classify US residential neighborhoods into 67 unique segments based on demographic and socioeconomic characteristics.
For more information on ESRI's Tapstry Segmentation click [here](#), or on the image below.

Esri Tapstry Segmentation

Buttermilk-Orphanage Intersection (and surrounding 1/2 mile)

Business Summary
The study area for this intersection (half mile radius) has a total of 103 businesses. These businesses employ 1,157 people. Roughly 75% of these employees are in the Retail Trade Industry and Service Industry. For a more detailed analysis of employment by industry click [here](#).

Demographic Summary
There are 3,007 people that live in the study area. There are currently 1,267 housing units, and the household size is 2.36 persons / household. Overall, the population is projected to grow by 5.1% annually through 2020.
For a more detailed demographic report, click [here](#).

Traffic Impacts on Business
According to discussions and interviews with business owners nearby, this intersection offers several business challenges. One of these challenges is the use of the Biggy Coffee parking lot as a cut through to avoid lengthy left turn wait times from Dixie Hwy onto Orphanage Road. In order to "make the left" drivers will speed through the parking lot, even as customers attempt to cross the parking lot.

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Traffic Analysis Methodology
Without mapLAB used an automated screen capture service to record traffic conditions at six locations around the Dixie Highway and Orphanage Intersection, in 1-hour increments (on the 1/2 hour). Traffic congestion information was collected from 5:30am to 8:30pm, daily, for two weeks. Typically, traffic congestion is not a problem overnight in this area.
There were 5 key points of this intersection that were specifically observed and recorded shown on map at right.
The traffic conditions were recorded from Google Maps, using their Traffic service. The advantage of using Google Traffic Maps is that it shows real-time traffic conditions, not a predictive model of traffic, or historic projection. Google Maps achieves real-time traffic conditions by analyzing the GPS-determined locations transmitted to them by a large number of cell phone users. By calculating the speed of users along a stretch of road, Google is able to generate a live traffic map. Google processes the incoming raw data about cell phone device locations, and then excludes anomalies such as a postal vehicle which makes frequent stops. When a threshold of users in a particular area is noted, the overlay along roads and highways on the Google map changes color.
Google Bids states that: "When we combine your speed with the speed of other phones on the road, across thousands of phones moving around a city at any given time, we can give a pretty good picture of live traffic conditions."

Buttermilk-Orphanage Intersection (and surrounding 1/2 mile)

Traffic Analysis
Traffic conditions at the Dixie / Buttermilk / Orphanage Intersection were observed for two consecutive weeks, from Monday December 7th, 2015 through Sunday December 20th, 2015.
NKYmapLAB used an automated screen capture service to record traffic conditions at five locations around the Dixie Highway and Orphanage Intersection, in 1-hour increments (on the 1/2 hour). Traffic congestion information was collected from 5:30am to 8:30pm, daily, for two weeks. Typically, traffic congestion is not a problem overnight in this area.
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TRAFFIC
None
Free Flow
Slowed
Heavy
Very Heavy

Buttermilk-Orphanage Intersection (and surrounding 1/2 mile)

Location 1 - Traffic Observation
Dixie Hwy (US 25) & Buttermilk Pike (KY 371)

Location 2 - Traffic Observation

Buttermilk-Orphanage Intersection (and surrounding 1/2 mile)

Location 2 - Traffic Observation
Buttermilk Pike East (KY 371) & Dixie Hwy (US 25)

Location 3 - Traffic Observation

Buttermilk-Orphanage Intersection (and surrounding 1/2 mile)

Location 3 - Traffic Observation
Dixie Hwy (US 25) 500 feet

Location 4 - Traffic Observation

Buttermilk-Orphanage Intersection (and surrounding 1/2 mile)

Location 4 - Traffic Observation
Dixie Hwy (US 25) & Orphanage Rd. (KY 371)

Location 5 - Traffic Observation

Buttermilk-Orphanage Intersection (and surrounding 1/2 mile)

Location 5 - Traffic Observation
Orphanage Rd. West (KY 371) & Dixie Hwy (US 25)

Future Landuse

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Existing Landuse

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Direction 2030
Direction 2030 is a new comprehensive plan for Kenton County. Changing demographics and economic conditions necessitate the need to re-evaluate policies that have been in place for the last 40 years since the preparation of the first comprehensive plan in 1972. The plan goals, growth and development in Kenton County and outline goals, objectives, and implementation strategies aimed at making Kenton County a great place to live. Direction 2030 is centered on public input, so residents' needs and desires essentially shaped the future of their community to create a vibrant, sustainable, economically competitive place to live and work.

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