



# GIS Update

Pre-Council Work Session  
September 16, 2013



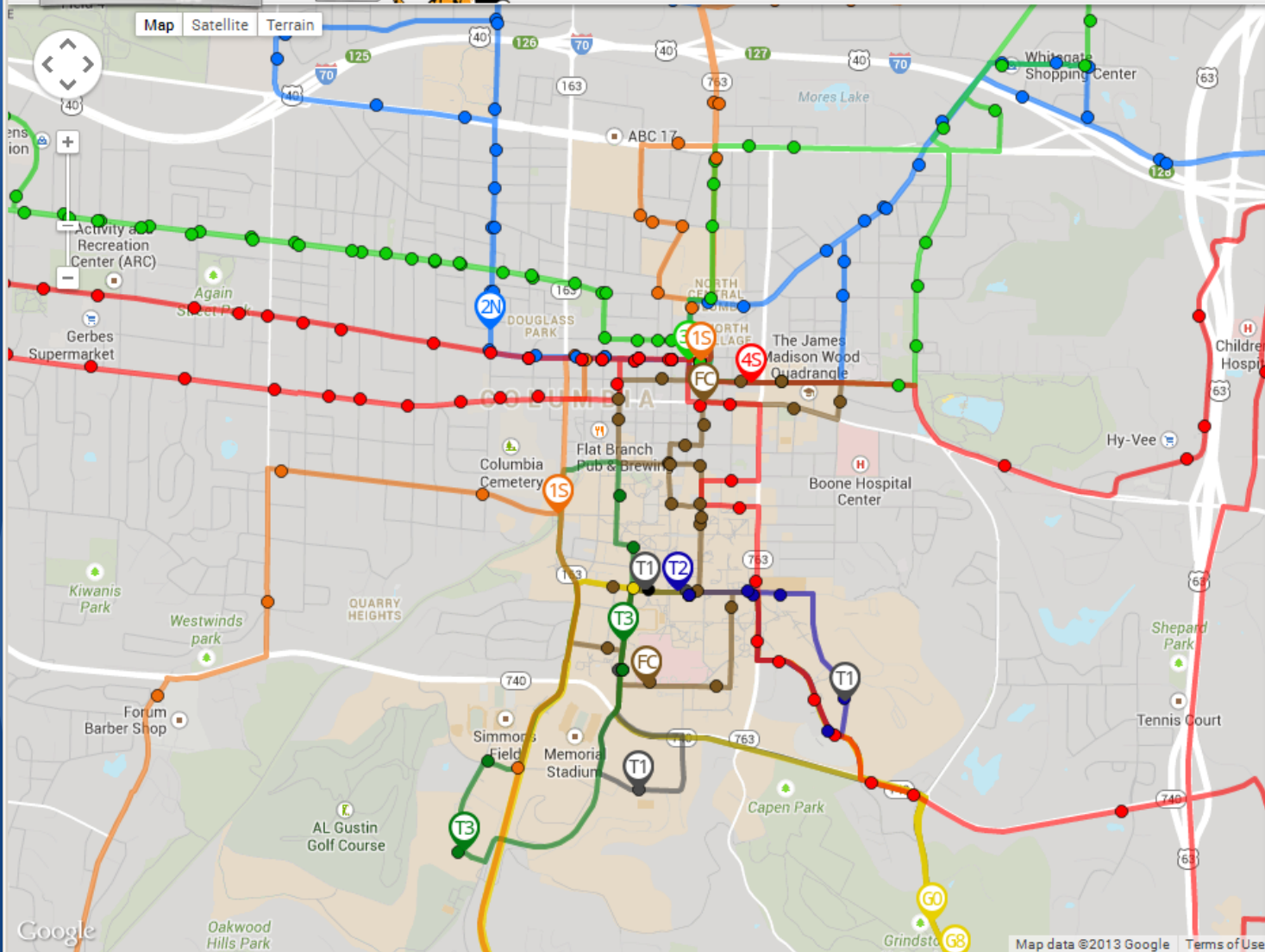
# Items - Enterprise Projects

- Fleet-AVL Program
  - Overview
- Utility Information
  - Seeking Council Direction



Double  
MAPColumbia  
Transit

Submit Feedback

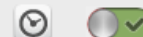
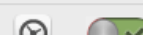


## Routes

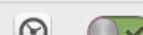
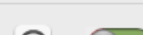
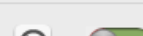
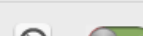
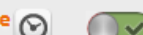
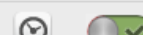
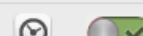
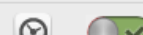
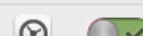
Show All

Show None

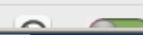
209 Black (B9)

107 FastCAT  
Express (FC)

210 Gold (G0)

207 Gold Route  
(G7)208 Gold Route  
(G8)401 Tiger Line  
Day - Hearnes  
Loop (T1)402 Tiger Line  
Day - Trowbridge  
Loop (T2)403 Tiger Line  
Day - Reactor  
Loop RP10 (T3)101 North Orange  
(1N)101 South Orange  
(1S)102 East Blue  
(2E)102 North Blue  
(2N)103 Northeast  
Green (3N)103 West Green  
(3W)

104 Southeast





# Fleet-AVL Program

- The City has more than 800 vehicles and pieces of large equipment.
- AVL as a tool:
  - Fleet inventory
  - Management tool
  - Operational efficiencies
  - Enhance service and transparency



# Fleet-AVL Program

- Currently negotiating with a vendor selected through an RFP process.
- Goals
  - Highly available, flexible, and accessible
  - Data availability to support decision making and communication
  - Make scalable for operational units



# Fleet-AVL Program

- *Short Term* - Upgrade existing
  - Public Works Street
  - Worker safety in Public Works
  - Environmental
- *Mid-Term* - Build program
  - Divisions budget for and convert fleets
- *Long Term* - Required equipment
  - Included as part of new or replacement vehicles in the City fleet

# Utility Information

- *Seeking Council Direction*
- Update on work and issues since December 2012
  - Process for including new data in CityView
  - Directed to continue work on utility information.
- Columbia is unique → Public record
  - Cost, usage, highs and lows available by contacting the Utility Billing Office.



# Utility Information

- Requests of the City
  - Green Rental Housing Tool Collaborative Project → *Rent Rocket*
    - Funded by Urban Sustainability Directors Network (Indiana University)
  - Rental Housing Energy Efficiency Group
    - City of Columbia, Columbia Housing Authority, Central Missouri Community Action
    - Tools for Tenants model (Orlando)
  - City commissions
  - Neighborhood associations





# Approaches to Utility Information

- Goal of effective communication
- Application base
- Map base
  - Points
  - Parcels - in City View
- Feed base



Find Address - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Find Address x Utility Usage Sample FlexViewer x Columbia City View x Layer: Average Monthly Electric Bill (ID: 0) x +

www.gocolumbiamo.com/cfforms/gis/cjtest/querybuffer.html

green housing tool

Intranet City GIS PWE Sanborn Wx Wiki.GIS.com WebTech Wireless - G... City of Columbia In th... Council Agenda Feed Licorize EBloggs City AGS CHB T&S >>

2401 W Broadway

Search Buffer

2401 W Broadway

Search

Buffer

**Score:** 100**Assessor#:** [1620400050060001](#)**Parcel Address:** [2401 W Broadway](#)**Utilities:** [Select Address](#)**Owner:** MILLS GATE HOUSE LLC**Owner (cont):****Owner Address:** 2650 S HANLEY STE 200**City:** ST LOUIS**State:** MO**Zipcode:** 63144**Government:** City of Columbia**Year Annexed:** 1955**Council Ward:** First**Council Person:** Fred Schmidt**Neighborhood Assn:** None**City Zoning Districts:** undefined**Zoning Overlay:****Development Status:** Developed**Parcel Area:** 8.4 acres**Metro 2020:** Commercial**Annexation Agreement:** 1955**Development Agreement:** No**Solid Waste:** City - Monday**Sewer Service:** City of Columbia**Electric Service:** Boone Electric**Water Service:** City of Columbia**Fire Protection:** CFD**Fire Station #:** Station 2**Police Protection:** Columbia Police Dept**Police District:** 50**Animal Control:** Urban Services**School District:** Columbia Public Schools**Elementary School:** Mary Paxton Keeley**Middle School:** Smithton**Jr High School:** West**Sr High School:** Hickman**Special Business District:** No**TDD:** No**TIF:** No**CID:** No

Utility Information - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Find Address x Utility Information x Utility Usage Sample FlexViewer x Columbia City View x Layer: Average Monthly Electric Bill (1... x +

gocolumbiamo.com/cfforms/gis/cjtest/parcellocid.cfm?PARCEL=1620400050060001

green housing tool

Intranet City GIS PWE Sanborn Wx Wiki.GIS.com WebTech Wireless - G... City of Columbia In th... Council Agenda Feed Licorize EBlogs City AGS CHB T&S

### City of Columbia, Missouri

ADDR NUM	LOC ID	▲ADDRESS	ASSESSOR	LATITUDE	LONGITUDE	
206577	5624	2401 W BROADWAY	1620400050060001	38.955287119047114	-92.37522061916248	
203270	5440	2401 W BROADWAY	1620400050060001	38.9552488891974	-92.37522068760892	
206972	5438	2401 W BROADWAY	1620400050060001	38.955210656051044	-92.37522075465438	
96721	6108	2401 W BROADWAY APT 1001	1620400050060001	38.956696284155015	-92.37533293615377	
96722	6114	2401 W BROADWAY APT 1002	1620400050060001	38.9566951910085	-92.37525424904652	
96723	6120	2401 W BROADWAY APT 1003	1620400050060001	38.95669530587345	-92.37517061435065	
96724	6126	2401 W BROADWAY APT 1004	1620400050060001	38.956694213989266	-92.37509192618988	
96725	6110	2401 W BROADWAY APT 1005	1620400050060001	38.95674238407701	-92.37533352600808	
96726	6116	2401 W BROADWAY APT 1006	1620400050060001	38.956741292028376	-92.37525483814457	
96727	6122	2401 W BROADWAY APT 1007	1620400050060001	38.95674140908917	-92.37517120233566	
96728	6128	2401 W BROADWAY APT 1008	1620400050060001	38.95674031583355	-92.37509251518131	
96729	6112	2401 W BROADWAY APT 1009	1620400050060001	38.95679486490845	-92.37533232912148	
12613	5480	2401 W BROADWAY APT 101	1620400050060001	38.95447652023527	-92.37549665078667	
96730	6118	2401 W BROADWAY APT 1010	1620400050060001	38.95679377011202	-92.37525364014981	
96731	6124	2401 W BROADWAY APT 1011	1620400050060001	38.95679388799633	-92.3751700049811	
96732	6130	2401 W BROADWAY APT 1012	1620400050060001	38.95679279391757	-92.37509131917683	
96580	5478	2401 W BROADWAY APT 102	1620400050060001	38.95453796802061	-92.37549654467978	
96581	5476	2401 W BROADWAY APT 103	1620400050060001	38.95460325805505	-92.37549806880456	
96582	5474	2401 W BROADWAY APT 104	1620400050060001	38.95466470611062	-92.37549795988468	
96583	5448	2401 W BROADWAY APT 105	1620400050060001	38.954728713123394	-92.37549621163943	
96584	5444	2401 W BROADWAY APT 106	1620400050060001	38.954790162001004	-92.37549610236435	
96585	5452	2401 W BROADWAY APT 107	1620400050060001	38.95485545093544	-92.37549762755042	

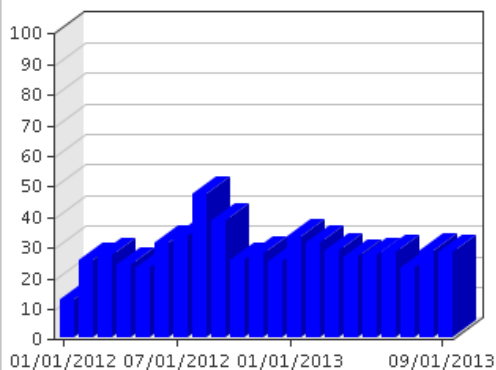


**Metered Services - 6108****Electric**

AVG: \$ 28.32 over 21 months.

LOW: \$ 12.42 over 21 months.

HIGH: \$ 47.32 over 21 months.



01/01/2012 \$ 12.42

02/01/2012 \$ 25.42

03/01/2012 \$ 27.21

04/01/2012 \$ 24.19

05/01/2012 \$ 22.78

06/01/2012 \$ 31.36

07/01/2012 \$ 33.07

08/01/2012 \$ 47.32

09/01/2012 \$ 38.35

10/01/2012 \$ 25.54

11/01/2012 \$ 27.42

12/01/2012 \$ 25.25

01/01/2013 \$ 33.18

02/01/2013 \$ 31.29

# Approaches to Utility Information

- Application base
- Map base
  - Points
    - Electric cost and usage
    - Water cost and usage
    - 36 month minimum, maximum, average
  - Parcels - in City View
- Feed base





## Utility Usage Sample FlexViewer



About

More

Basemap

## Legend

## Utility Usage

## Average Monthly Electric Bill

- Under \$50
- 50 - 100
- 100 - 150
- 150 - 200
- Over \$200

Huntsdale 5 km  
3 mi

1684693.43354575 1170899.78003605



## Utility Usage Sample FlexViewer



About

## Legend

## Utility Usage

## Average Monthly Electric Bill

Under \$50

50 - 100

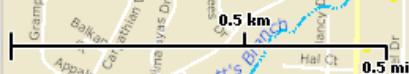
100 - 150

150 - 200

Over \$200

More

Basemap



1679046.3556645822 1141885.036694963

POWERED BY  
esri





## Utility Usage Sample FlexViewer

About

## Legend

## Utility Usage

## Average Monthly Electric Bill

- Under \$50
- 50 - 100
- 100 - 150
- 150 - 200
- Over \$200

100 m

400 ft

1676398.2020592606 1137370.8173557909



## Utility Usage Sample FlexViewer

About

## Legend

## Utility Usage

## Average Monthly Electric Bill

- Under \$50
- 50 - 100
- 100 - 150
- 150 - 200
- Over \$200

2401 West BROADWAY , Apartment 1009

Electric Sample Size: 36

## Electric Cost Statistics

Minimum: \$9.54  
Maximum: \$150.45  
Average: \$45.682500000000005

## Electric Usage Statistics

Minimum: 31.82kWh  
Maximum: 1317.35kWh  
Average: 389.29333333333324kWh

## Water Sample Size:

## Water Cost Statistics

Minimum: \$  
Maximum: \$  
Average: \$

More

Basemap

100 m

400 ft

1675991.9520592606 1137377.0673557909



## Utility Usage

Average Monthly Electric Bill

- Under \$50
- 50 - 100
- 100 - 150
- 150 - 200
- Over \$200

2402 West BROADWAY,

**Electric Sample Size: 33**

## Electric Cost Statistics

Minimum: \$0  
Maximum: \$404.58  
Average: \$156.337272727273

## Electric Usage Statistics

Minimum: 0kWh  
Maximum: 3246.67kWh  
Average: 1370.1878787878784kWh

**Water Sample Size: 30**

## Water Cost Statistics

Minimum: \$0  
Maximum: \$64.62  
Average: \$37.00090909090909



## Utility Usage Sample FlexViewer

About

## Legend

## Utility Usage

## Average Monthly Electric Bill

- Under \$50
- 50 - 100
- 100 - 150
- 150 - 200
- Over \$200

## Electric Usage Statistics

Minimum: 0kWh  
Maximum: 3246.67kWh  
Average: 1370.1878787878784kWh

## Water Sample Size: 30

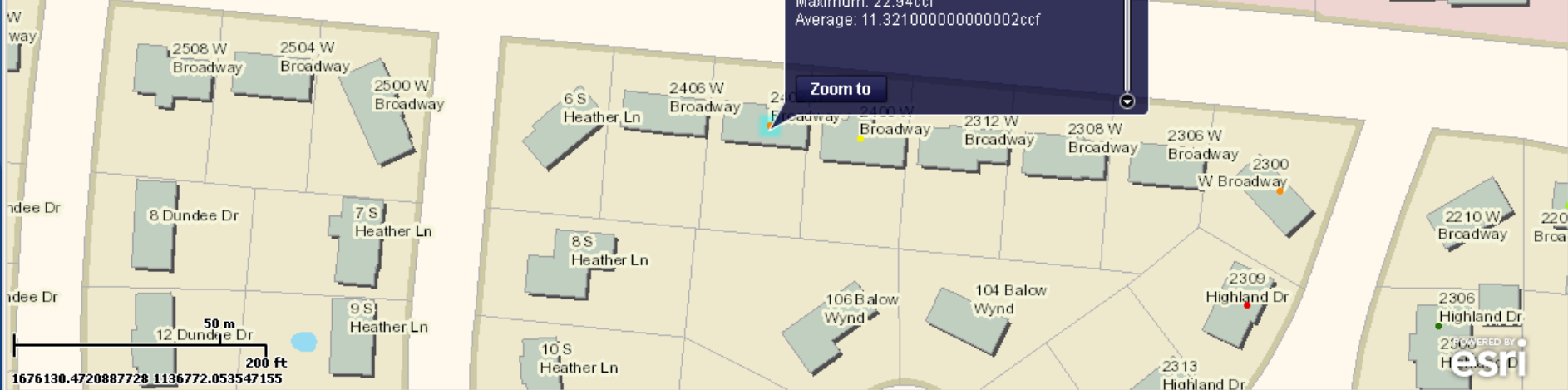
## Water Cost Statistics

Minimum: \$0  
Maximum: \$64.62  
Average: \$37.00090909090909

## Water Usage Statistics

Minimum: 0ccf  
Maximum: 22.94ccf  
Average: 11.321000000000002ccf

Zoom to





# Approaches to Utility Information

- Application base
- Map base
  - Points
  - **Parcels - in City View or similar**
    - Electric cost and usage
    - Water cost and usage
    - 36 month minimum, maximum, average
    - Rental status
    - Home Performance with Energy Star
    - Occupancy limits
- Feed base





## Columbia City View

Map Details

Map Instructions

How to Print

Map Source

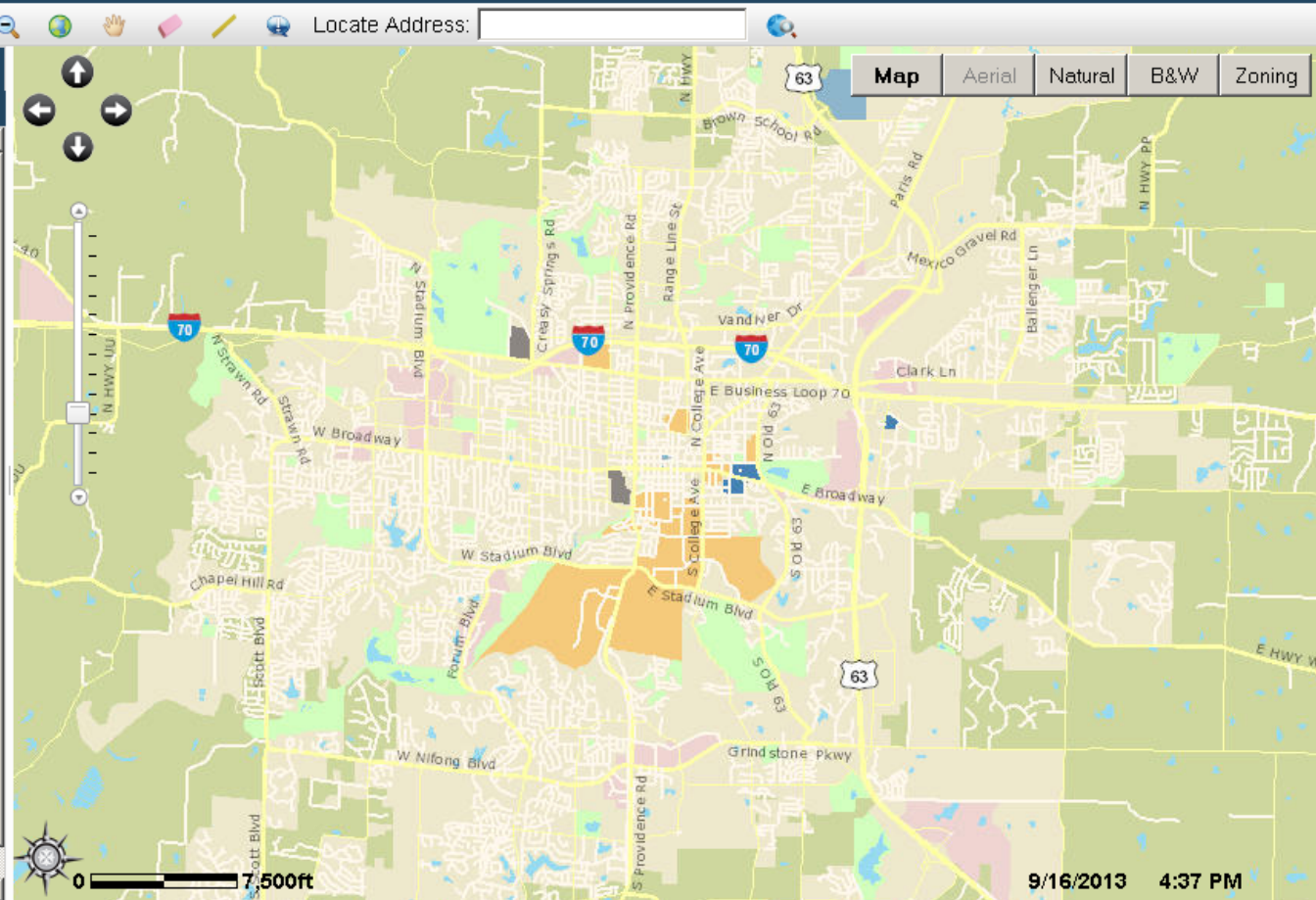
Feedback

## Information Panel

Legend Results

## LEGEND

- Boone County
- City of Columbia
- Roadways
  - Freeway
  - Major
  - Minor
  - Local
- Parks
- Major City Trails
- Community Features
  - Campus
  - Cemetery
  - Commercial
  - Government
  - Hospital
- Boone County Tax Parcels
- Structures
- Streams - Blue Line
  - Type I - Perennial
  - Type II - Intermittent
  - Type III
- Ponds and Lakes



The materials in this site are provided "as is" and without warranties of any kind express or implied. The source of the 2009 elevation model, 2011 imagery, parcel boundaries and ownership information is the Boone County Assessor. Please review the [City of Columbia](#) and [Boone County](#) disclaimers.



## Columbia City View

Map Details

Map Instructions

How to Print

Map Source

Feedback

Locate Address:

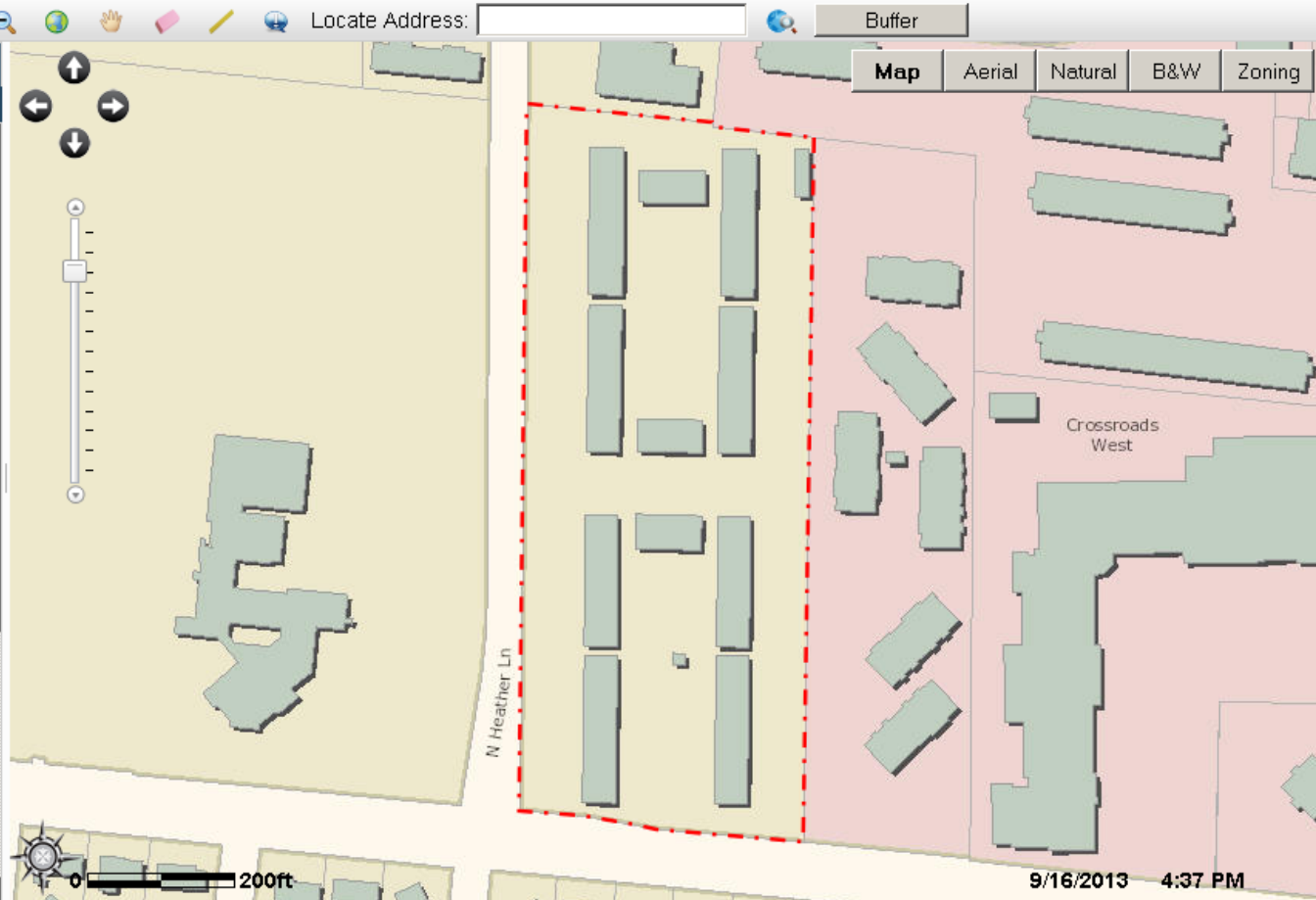
Buffer

## Information Panel

Legend

Results

**Assessor #:** 1620400050060001  
**Parcel Address:** 2401 W Broadway  
**Owner:** MILLS GATE HOUSE LLC  
**Owner (cont.):**  
**Owner Address:** 2650 S HANLEY STE 200  
**City:** ST LOUIS  
**State:** MO  
**Zipcode:** 63144  
**Government:** City of Columbia  
**Year Annexed:** 1955  
**Council Ward:** First  
**Council Person:** Fred Schmidt  
**Neighborhood Assn:** None  
**Zoning Districts:** R-4  
**Zoning Overlay:**  
**Development Status:** Developed  
**Parcel Area:** 8.4 acres  
**Metro 2020:** Commercial  
**Annexation Agreement:** No  
**Development Agreement:** No  
**Solid Waste:** City - Monday  
**Sewer Service:** City of Columbia  
**Electric Service:** Boone Electric  
**Water Service:** City of Columbia  
**Fire Protection:** CFD  
**Fire Station #:** Station 2  
**Police Protection:** Columbia Police Dept  
**Police District:** 50  
**Animal Control:** Urban Services  
**School District:** Columbia Public Schools  
**Elementary School:** Mary Paxton Keeley  
**Middle School:** Smithton  
**High School:** West



The materials in this site are provided "as is" and without warranties of any kind express or implied. The source of the 2009 elevation model, 2011 imagery, parcel boundaries and ownership information is the Boone County Assessor. Please review the [City of Columbia](#) and [Boone County](#) disclaimers.



## Columbia City View

Map Details

Map Instructions

How to Print

Map Source

Feedback

Locate Address:

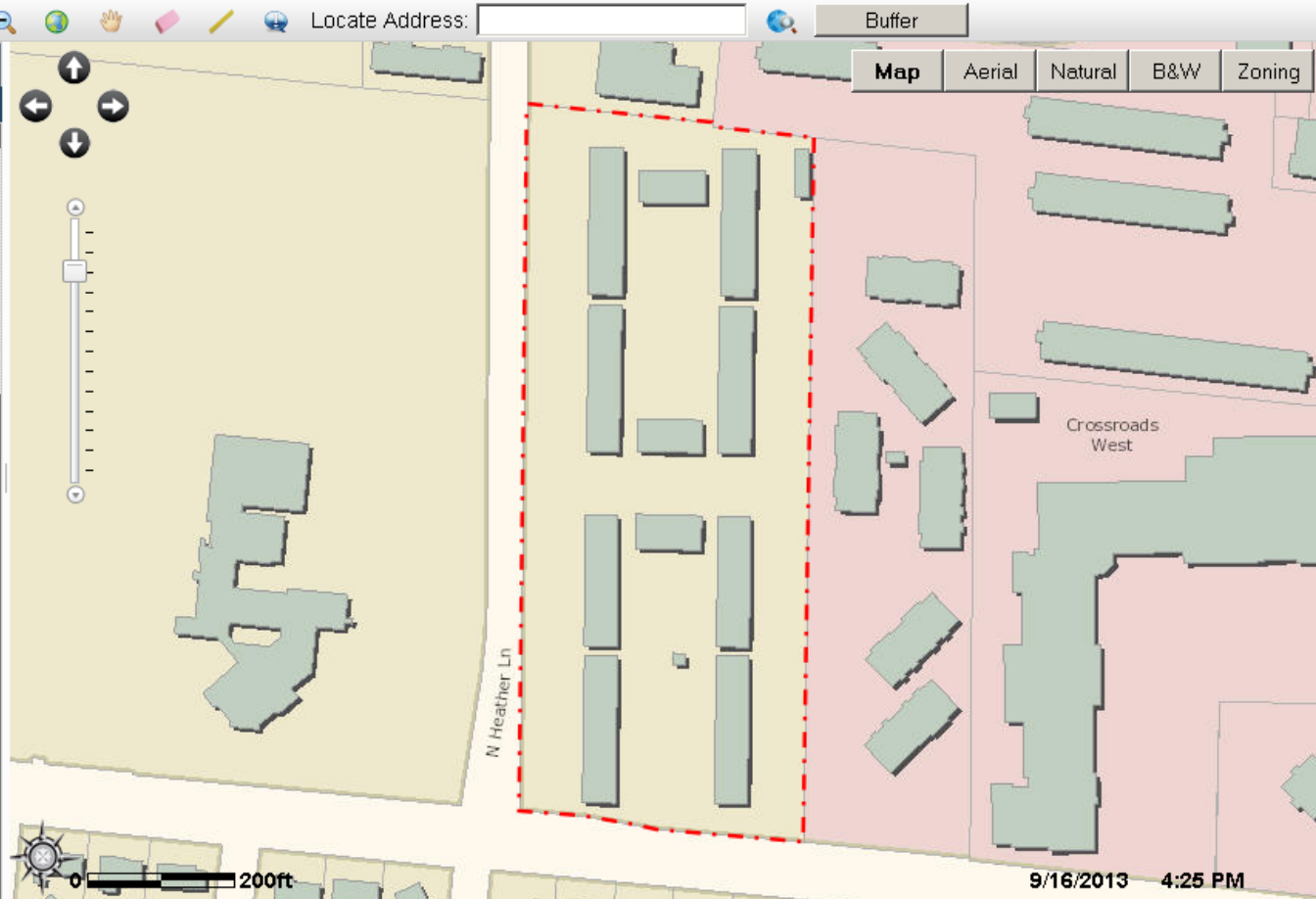
Buffer

## Information Panel

Legend Results

## Zoning Overlay:

**Development Status:** Developed  
**Parcel Area:** 8.4 acres  
**Metro 2020:** Commercial  
**Annexation Agreement:** No  
**Development Agreement:** No  
**Solid Waste:** City - Monday  
**Sewer Service:** City of Columbia  
**Electric Service:** Boone Electric  
**Water Service:** City of Columbia  
**Fire Protection:** CFD  
**Fire Station #:** Station 2  
**Police Protection:** Columbia Police Dept  
**Police District:** 50  
**Animal Control:** Urban Services  
**School District:** Columbia Public Schools  
**Elementary School:** Mary Paxton Keeley  
**Middle School:** Smithton  
**Jr High School:** West  
**Sr High School:** Hickman  
**Special Business District:** No  
**TDD:** No  
**TIF:** No  
**CID:** No  
**DBR Library Tax:** Columbia Library  
**CDBG Area:** Yes  
**NRT Area:** No  
**Major Watershed:** Perche Creek  
**Secondary Watershed:** Perche Creek  
**Immediate Watershed:** Harmony Creek  
**Electric Average:** 49.483552355901736  
**Electric Maximum:** 696.6  
**Electric Minimum:** 0



9/16/2013 4:25 PM

The materials in this site are provided "as is" and without warranties of any kind express or implied. The source of the 2009 elevation model, 2011 imagery, parcel boundaries and ownership information is the Boone County Assessor. Please review the [City of Columbia](#) and [Boone County](#) disclaimers.



# Proposed Data Table Items

- HPwES Program: Yes or No
- Registered Rental(s): Yes or No
- - 36 Month Utility Data -
- Electric Avg. Use kWh:
- Electric Min. Use kWh:
- Electric Max. Use kWh:
- Electric Avg. Cost:
- Electric Min. Cost:
- Electric Max. Cost:
- Water Avg. Use ccf:
- Water Min. Use ccf:
- Water Max. Use ccf:
- Water Avg. Cost:
- Water Min. Cost:
- Water Max. Cost:

# Approaches to Utility Information

- Application base
- Map base
  - Points
  - Parcels - in City View
- **Feed base**



# Approaches to Utility Information

- Constantly updated table where each row contains utility information for an account made available to the public.
- Feed could include:
  - Address information
  - Latitude and longitude coordinates
  - Electric cost and/or usage for billing cycle
  - Water cost and/or usage for billing cycle



# Utility Information - Issues

1. Making public data more accessible in a different form:
  - Website
  - Web map
  - Data stream



# Utility Information - Issues

2. The City's system of billing utilities
  - Easy for single-family residential, complicated for many other circumstances
3. Inaccurate meter readings
4. Data not tell the whole picture
  - Electric heat or gas heat?
5. Condition of housing stock varies
6. Human behavior varies





# Municipal Electric Utilities

- Austin, TX
- Lincoln, NE
- Springfield, IL
- Springfield, MO
- Ames, Iowa

[Commercial Rebates >](#)[Online Data Library >](#)[Recycle to Win \\$500 >](#)[Report an Outage >](#)



**Austin Energy Data Library**  
Explore our operational and financial data quickly and easily



# Potential Policy Directions

- Seeking Council Direction:
- Status quo *or* open and available.
- If open and available:
  - Each and every *or* classified
  - Usage, cost, or both
  - Aggregate (parcel or larger), point-based, and/or raw data feed
  - Associated information