505 Silver Thorne Drive
Columbia, Missouri 65203
[redacted]

Dear Members of the Planning and Zoning Commission:

My name is Frank Schmidt and I live with my wife, Brenda Peculis, at 505 Silver Thorne Drive, adjacent to the property under discussion. By way of background, I am a Past President of the Fairview Neighborhood Association. I am currently a member of the Mayor's Task Force on Pedestrian Safety and, a decade ago, was a member of the City Task Force that proposed the notification process that preceded this meeting. I will focus only on the traffic and pedestrian safety that would be compromised by the proposed project.

The first issue is the traffic load on Smith Drive. Smith is designated as a Neighborhood Collector Street. According to the Columbia Development Code Design Standards, it should handle 1500-3500 vehicles per day. According to the Federal Highway Administration, the average household generates approximately 10 trips per day. With 164 units, this project alone would put Smith Drive into the neighborhood collector category, notwithstanding the trips that are already generated by traffic moving from Louisville Drive (including cut-through from Georgetown), Silver Thorne Drive, Stone Valley Parkway, and the Hamlet subdivision. As development of the PUD already zoned at Smith and Scott proceeds, the load on Smith will increase, degrading the Level of Service on Smith and Louisville. I haven't seen the raw data from the peak traffic study that Mr. Crockett provided; however, I note that the study took place when Scott was closed at Leighton, South of Vawter School Road so its data can't take into account the full traffic load on Scott. Further, the study seems to estimate only one car trip per household in the morning rush hour and another in the evening. This is a dubious assumption, given the demographics targeted by the proposed development, the fact that the Breckenridge subdivision would have no neighborhood connectivity, the likely presence of children who will be driven to school, soccer practice and the like, and, finally, the density in the proposed PUD, where the City code allows four unrelated adults and their vehicles per dwelling.

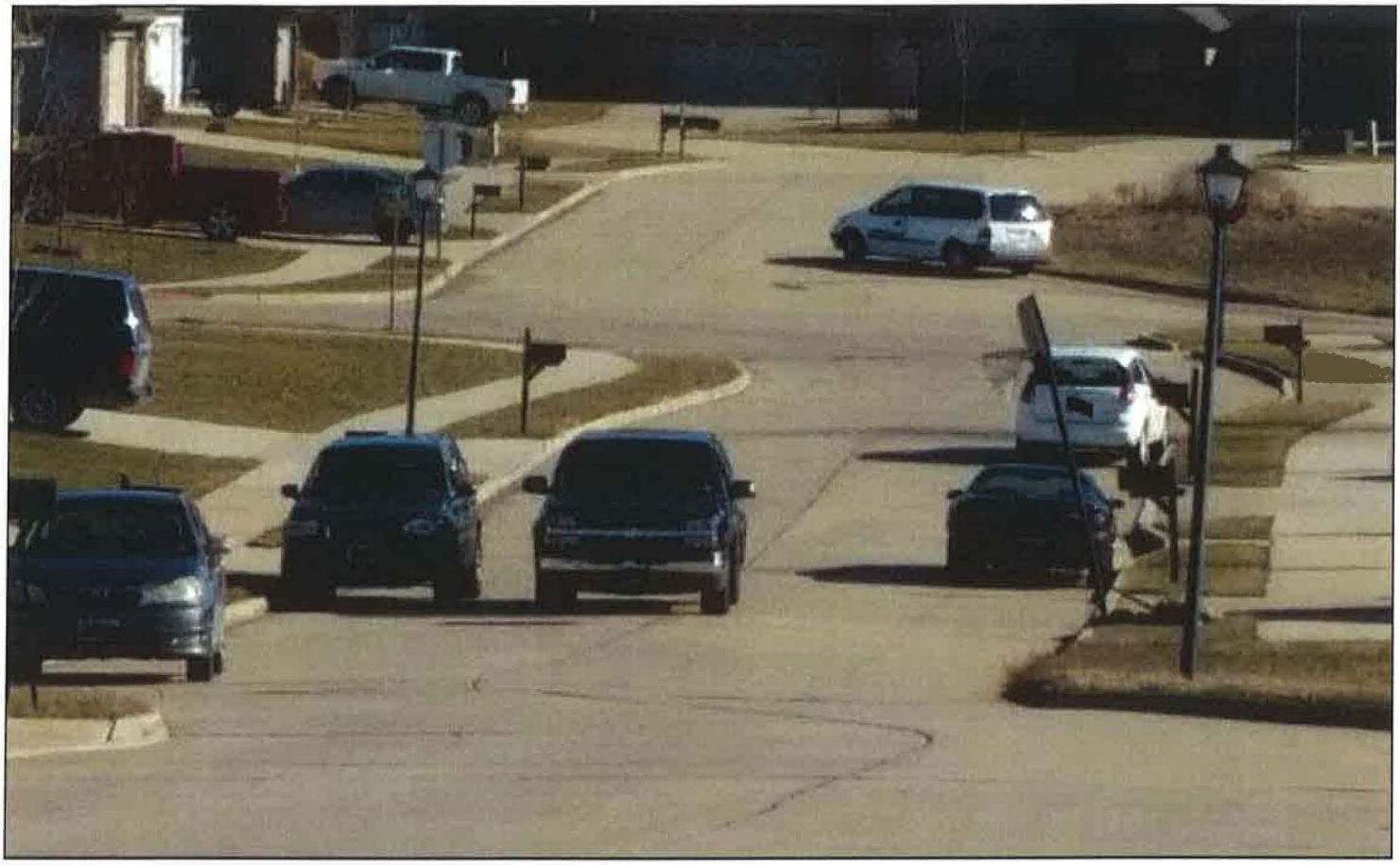
The second issue is proposed access to Smith Drive. Neighborhood collector standards that I have been able to find indicate that intersecting streets shouldn't be closer than 450 ft (150 meters) to each other (Portland OR). Although the drawings don't show them all, the submitted plan has three T-intersections less than 150 feet from each other (proposed Double Jack Drive, existing Louisville and Silver Thorne). We already face delays and safety issues turning Left from Silver Thorne and Stone Valley onto Smith. These issues are compounded by what I have learned is the "Vertical Curve" on Smith between Stone Valley and Silver Thorne. That's an engineering term - the rest of us call it a hill. Westbound traffic on Smith regularly exceeds the posted speed limit coming over the hill. This makes it quite unsafe now whether we are walking in the neighborhood and crossing the street (there are no cross walks, traffic calming or signage om Smith) or turning our bicycles onto or off of Smith (there are no designated bike lanes), or making the Left turn from the stop sign at Silver Thorne when we're driving. Fast moving cross traffic coming over the hill can't see us. The speed of Eastbound traffic on Smith similarly causes a hazard for left turns off Stone Valley and right turns out of the Hamlet. The only thing

that has prevented crashes or the need for traffic calming is the relatively low density at present. The Breckenridge development will cause safe traffic capacity to be exceeded, not merely at the intersection with Scott, but all along Smith (independent of LOS classification). The increased density will require extensive calming measures, including installation of roundabouts and speed tables, to control speed on Smith.

Finally, the developer's proposal to modify the CATSO plan goes against all principles of sound planning and zoning. Putting traffic out to UU on an extended Smith and removing the planned arterial connection on West Broadway would change a neighborhood collector by two grades into an arterial street. Should this happen, traffic (including bicycles) will have to travel on the inadequate, non-shouldered,"vertically curved" UU to reach or cross I-70. The only reason to change this longstanding plan is to allow the development to expand toward the easement for the Broadway extension. All the other developers in Columbia take the present plan into consideration when they formulate their own proposals. If there is a fundamental principle of planning by local government, it is that plans and codes drawn up by the entire city should not be jettisoned for the short-term profit of a few individuals. Otherwise, why plan at all?

I urge you to recommend rejection of this plan. Thank you for the opportunity to speak and I am happy to answer questions.

Frank Schmidt



Clinton Smith <clinton.smith@como.gov>

Fwd: [Planning] Citizen Feedback Form : 3-24-2016 02:45:26 pm

1 message

Patrick Zenner <patrick.zenner@como.gov> Thu, Mar 24, 2016 at 3:46 PM
To: Clinton Smith <Clinton.Smith@como.gov>

Public Comment for tonight's meeting. Please print and distributed to Commissioners.

Thanks

---------- Forwarded message ----------
From: <noreply@gocolumbiamo.com>
Date: Thu, Mar 24, 2016 at 2:45 PM
Subject: [Planning] Citizen Feedback Form : 3-24-2016 02:45:26 pm
To: planning@gocolumbiamo.com

The following form submission was received on the City of Columbia website. The sender has been notified of the successful receipt of this request. Recipients should respond to this request within a reasonable time frame, normally within 1 to 3 business days. For more information regarding origin of this message or to report spam contact the Webmaster at webmaster@gocolumbiamo.com.

Below are the results of a Web form submitted on: March 24th, 2016 at 02:45PM (CDT).

Name: Denise M. Manier
Email Address: [redacted]
Comments: Clint Smith, Planning and Zoning:
The proposed Breckenridge Development, shows an outlet from the subdivision onto Whitefish in Quail Creek West. Very near to that proposed outlet, is the intersection of Whitefish and Dolly Varden. When the homeowners at that intersection park on the street, in front of their properties, it forces traffic to move into the oncoming traffic side of the street. It's a problem now from a visibility standpoint, fortunately very little traffic comes from the direction of Greystone. When Whitefish becomes an outlet for Breckenridge, the increased traffic will definitely cause a safety issue at that intersection. if you have not driven that street, it would be difficult for you to visualize the problem. I'm sure that you would counter, that the law prevents individuals from parking near a corner, but I'm sure you know that this occurs, and occurs regularly in neighborhoods. This intersection is also a school bus stop. I'm wondering if you have considered this issue and what steps yo

u plan to take to alleviate the safety issue at this intersection? It seems to me that Whitefish is a bit narrow for the traffic volume that the Breckenridge Development will produce in that direction. Is there any plan to widen the street? What is the possibility of "No Parking Here to Corner" signs?
Sincerely,
Denise M. Manier
[redacted]

IP:173.24.35.51
Form: Citizen Feedback Form

--
Patrick R. Zenner, Development Services Manager

Opposition to Annexation Paperwork

George Batek <[redacted]> Thu, Mar 24, 2016 at 1:23 PM
To: Clinton Smith <clinton.smith@como.gov>

Mr. Smith,

Thanks for the form, I have a question as to it, it shows only one notarization form for the list, the notary obviously will witness and verify each signature on the list, do we than notarize them as a list? I do not think the city would want a notarization form for each individual, unless some are added later.

Another question I have is the language in 29-34b says 30% of the surrounding property, does that mean properties or just land mass. And does it refer only to properties **within the city** 185 feet from the land requested to be annexed.

Obviously our homeowners are not in agreement with the request. We find the PUD particularly offensive as it is a dense development as it is. I believe Jay Gephardt from Graystone has submitted his concerns and objections along with the folk from Quail Creek. We concur with all their concerns, my understanding is there is a cave system under that property. As to us specifically we are concerned with the traffic on Smith and the intersection at Silver Thorne and Louisville and the street planned for the development. We already have trouble taking a left out of Stone Valley and Silver Thorne. Then I believe the Tompkins and Crockett Engineering have some crazy idea to suggest that Smith, A neighboorhood collector, be converted as a main artery out to UU? Not a good neighbor! Please include our homeowners objection to PnZ and the Council.

Thank you,

George Batek

[Quoted text hidden]

All public comment following this cover letter was received as one packet on March 24, 2016. Bookmarks in PDF viewer identify the separate documents within the packet as originally noted by the submitter.

March 21, 2016

Planning and Zoning Members

Re: Proposed Breckenridge Park Annexation, Zoning, Preliminary Plat and PUD plan.

Dear Planning and Zoning Members:

Please find enclosed information the neighbors in Quail Creek West, Graystone Estates and Stoneridge Estates have assembled concerning the proposed annexation, zoning, preliminary plat and zoning for the development to be known as Breckenridge Park.

We realize this is a lot of information, but that is why we believe it was necessary to provide this information to you prior to the meeting. We hope you will have time to look over and read this information. We are not opposed to the development of this property, but completely disagree with the City Staff that the proposed zoning, preliminary plat and PUD plan are appropriate for this unique property.

We will have several speakers who plan to attend the meeting to make presentations. We would ask that these speakers be allowed some leeway in the time they have to speak as some of these topics are difficult to briefly cover in 3 minutes.

Sincerely,

Quail Creek West, Graystone Estates and Stoneridge Estates Neighbors.

We oppose the annexation of the proposed Breckenridge Park plan to the city of Columbia.

Date	Name	Address	E-Mail address	Signature
1-30-16	VANCE P. PITMAN	5115 LAKE TROUT CT	[redacted]	
1-30-16	Matt Hudson	5107 Lake Trout Ct		
1-30-16	Denise M Manier	5105 Lake Trout Ct		Denise M Manier
1-30-16	Wallace G. Manier	5105 Lake Trout Ct.		Wallace G. Manier
1-30-16	Whitney Hines	5101 Lake Trout		W. Hines
1-30-16	Lance Kauffman	5100 Lake Trout		
1-30-16	Chris Watkins	5102 Lake Trout Ct.		
1-30-16	Brian Hornbeck	5108 Lake Trout Ct.		
1-30-16	Kathy Glabe	5112 Lake Trout Ct		Kathy Glabe
1-30-16	Taylor Drennan	5114 Lake Trout Ct		
1-30-16	Kaec Drennan	5114 Lake Trout Ct.		Kaec Drennan
1-30-16	Ted Jackson	5101 Sockeye Ct,		Ted Jackson
1-30-16	Tracy Jackson	5101 Sockeye Ct		Tracy Jackson

We oppose the annexation of the proposed Breckenridge Park plan to the city of Columbia.

Date	Name	Address	E-Mail address	Signature
1-23-16	MICHAEL TUCKER	5203 WHITEFISH	[redacted]	[signature]
1-23-16	SALLY TUCKER	5203 WHITEFIS	[redacted]	Sally Tucker
1/23/16	Tawanna Scott	5100 Sockeye ct	[redacted]	[signature]
1/23/16	Rex Scott	5100 Sockeye Ct	[redacted]	[signature]
1/23/16	Jim Hen	5102 Sockeye Ct	[redacted]	[signature]
1/23/16	CRAIG ROBERTS	5104 Sockeye Ct.	[redacted]	[signature]
1/23/16	Joetta Roberts	5104 Sockeye Ct	[redacted]	Joetta Roberts
1/23/16	Ursula Kriemelman	1109 Dolly Varden Dr.	[redacted]	[signature]
1/23/16	Jane Ledwig	5109 Sockeye Ct.	[redacted]	[signature]
1/23/16	[illegible]	5705 Scholl [illegible]	[redacted]	[signature]
1/23/16	WILLIAM RIZZO	5103 SOCKEYE Ct	[redacted]	William M. Rizzo
1/31/16	Lars Cook	5107 Sockeye Ct	[redacted]	[signature]
1/31/16	Bryan Fahs	5113 Lake Trout Ct	[redacted]	[signature]
1/31/16	Matt Martin	5111 Lake Trout Ct.	[redacted]	[signature]
1/31/16	Chad Pothoff	5109 Lake Trout Ct	[redacted]	[signature]
1/31/16	Dale Musser	5103 Lake Trout Ct	[redacted]	[signature]
1/31/16	Mike Pratt	5110 Lake Trout Ct	[redacted]	[signature]

We oppose the annexation of the proposed Breckenridge Park plan to the city of Columbia.

Date	Name	Address	E-Mail address	Signature
1-30-16	Julie Parfitt	5106 Whitefish Dr	[redacted]	
1/30	Jennifer Schmidt	5103 Whitefish Dr		
1-30-16	Rahgy Abadir	5105 Whitefish Dr.		
1-30-16	SALLY TUCKER	5203 WHITE		@AOL.com
1-30-16	MICHAEL TUCKER	5203 WHITE FISH		
1-30-16	Brandon Roberts	5104 Whitefish Dr		
1/30/16	Heather Roberts	5104 Whitefish Dr.		

We oppose the annexation of the proposed Breckenridge Park plan to the city of Columbia.

Date	Name	Address	E-Mail address	Signature
	Travis Blevthing	5108 Grayling	[redacted]	
1-30-16	Eric Blumberg	5100 Grayling		
1-30-16	Austin Soendker	5107 Grayling Ct.		816-582-7920
1-30-16	Kyle Luke	5105 Grayling Ct		
1-30-16	Maya Luke	5105 Grayling Ct.		224-459-7560
1-30-16	Sheri Blumberg	5100 Grayling Ct		
1-31-16	Nick Haskell	1108 Dolly Varden Dr.		
1-31-16	Courtney Haskell	1108 Dolly Varden		
2-2-16	Mingshan Li	1100 Dolly Varden		
2-2-16	Yuying Suo	1100 Dolly Varden		
2-2-16	Susan Craig	5101 Grayling Ct.		
2-2-16	Justin Craig	5101 Grayling Ct		
2/14/16	Doug Nelson	5108 Sockeye Ct		
2/14/16	Joanne Nelson	5108 Sockeye Ct		

We oppose the annexation of the proposed Breckenridge Park plan to the city of Columbia.

Date	Name	Address	E-Mail address	Signature
1-30	Amy Pescaglia	1185 S. Graystone	[redacted]	Amy Pescaglia
1/30	Sheryl Koenig	1103 Dolly Varden		com Sheryl Koenig
1/30	Bill Nelson	1101 Dolly Varden		em Bill Nelson
1/30	Ron Kelly	1003 Dolly Varden		on Ron Kelly
1-30	August Nielsen	1001 Dolly Varden		August Nie
1-30-16	Samantha Nielsen	1001 Dolly Varden		
1-30-16	Rachel Nielsen	1001 Dolly Varden		Rachel Nie
1-30-16	Barb Moore	907 Dolly Varden		Barb Moore
1/30/16	Richard Moore	907 Dolly Varden		
1/30/16	Retha Chandrani	905 Dolly Varden		
1/30/16	Michael Haynes	903 Dolly Varden		Michael Haynes
1/31/16	Matt Kennedy	909 Dolly Varden		Matt Kennedy
1/31/16	BRENT WELCH	1007 DOLLY VARDEN DR		
1/31/2016	BELINDA WELCH	1007 DOLLY VARDEN		
2/14/16	Doug Nelson	5108 Sockeye Ct		
2/14/16	Jeanne Nelson	5108 Sockeye Ct		Jeanne Nelson

We oppose the connection of Whitefish road between Quail Creek West and the proposed Breckenridge Park neighborhoods.

Date	Name	Address	E-Mail address	Signature
1-30-16	VANCE P. PITMAN	5115 LAKE TROUT CT		
1-30-16	Matt Hudson	5107 Lake Trout		
1-30-16	Denise M Manier	5105 Lake Trout Court		Denise M Manier
1-30-16	Wallace G. Manier	5105 Lake Trout Court		
1-30-16	WHITNEY HINES	5101 Lake Trout		
1-30-16	Lenie Kauffman	5100 Laketrout ct		
1-30-16	Chris Watkins	5102 Lake Trout Ct.		
1-30-16	Brian Hornberg	5108 Lake trout Ct.		
1-30-16	Kathy Glabe	5112 Lake Trout Ct		Kathy Glabe
1-30-16	Taylor Drennan	5114 Lake Trout Ct		
1-30-16	Traci Drennan	5114 Lake Trout Ct.		Traci Drennan
1/30/16	WILLIAM RIZZO	5103 SOCKEYE CT		
1/30/16	Joetta Roberts	5104 Sockeye Ct		Joetta Roberts
1/30/16	Ted Jacobson	5101 Sockeye Ct		Ted Jacobson
1/30/16	Tracy Jackson	5101 Sockeye Ct		
1/30/16	Ray Scott	5100 Sockeye Ct.		
1/30/16	JANAUNA SCOTT	5100 Sockeye Ct.		
1/30/16	CRAIG ROBERTS	5104 Sockeye Ct.		
1/31/16	Lars Cook	5107 Sockeye Ct.		

We oppose the connection of Whitefish road between Quail Creek West and the proposed Breckenridge Park neighborhoods.

Date	Name	Address	E-Mail address	Signature
1-30-16	Julie Parfitt	5106 Whitefish Dr.	[redacted]	Julie Ann Parfitt
1-30-16	Nathan Parfitt	5100 whitefish Dr	[redacted]	Nathan Parfitt
1-30-16	Becky Melton	5102 Whitefish	[redacted]	[illegible]
1-30-16	Fern Wallace	901 - Louisville Rd	[redacted]	Fern Wallace
1-30-16	Lynn Payne	5004 Whitefish Ct	[redacted]	Lynn Payne
1/30/16	There Boyer	5000 whitefish Ct	[redacted]	There Boyer
1/30/16	Jennifer Schmidt	503 whitefish	[redacted]	[illegible]
1/30/16	Pek Fei	5113 White fish Dr	[redacted]	[illegible]
1/30/16	Peggy Veatch	5205 "	[redacted]	Margaret Veatch
1/30/16	Larry Veatch	5205 WhitefishDr	[redacted]	Larry Veatch
1/30/16	Santhosh Kumar Polk	5116 whitfish Dr	[redacted]	[illegible]
1/30/16	Yochang Sun	5114 whitefish Dr.	[redacted]	[illegible]
1/30/16	Ross Brown	5005 Whitefish Ct.	[redacted]	[illegible]
1-30-16	Rahgy Abadir	5105 Whitefish Dr.	[redacted]	[illegible]
01-30-16	Anne Osborne	5107 Whitefish Drive	[redacted]	[illegible]
01-30-16	Mina Omerovic	5009 Whitefish Dr	[redacted]	Mina Omerovic
01-30-16	Noah Parfitt	5106 whitefish Dr	[redacted]	Noah P
01-30-16	David J. Parfitt	5106 WhiTefish Dr.	[redacted]	David J Parfitt
01/30/16	Brandon Roberts	5104 whitefish Dr		[illegible]

We oppose the connection of Whitefish road between Quail Creek West and the proposed Breckenridge Park neighborhoods.

Date	Name	Address	E-Mail address	Signature
1-30-16	Dan E Robinson	5165 Sockeye	[redacted]	
1-30-16	Traci Blevins	5100 Grayling		Traci Blevins
1-30-16	Eric Blumberg	5100 Grayling		
1-30-16	Austin Swaltzer	5107 Grayling Ct.		
1-30-16	Kyle Luke	5165 Grayling Ct.		
1-30-16	Maya Luce	5105 Grayling Ct		
1-30-16	Sheri Blumberg	5100 Grayling Ct		Sheri Blumberg
1-31-16	Nick Haskell	11108 Dolly Varden Dr		
1-31-16	Courtney Haskell	11108 Dolly Varden		Courtney Haskell
2-2-16	Mingshan Li	11100 Dolly Varden		.com
2-2-16	Yuying Suo	11100 Dolly Varden		.com
2-2-16	Susan Craig	5101 Grayling Ct.		Susan Craig
2-2-16	Justin Craig	5101 Grayling Ct		

We oppose the connection of Whitefish road between Quail Creek West and the proposed Breckenridge Park neighborhoods.

Date	Name	Address	E-Mail address	Signature
1/30/16	Sheryl Koenig	1103 Dolly Varden	[redacted]	Sheryl Koenig
1/30/16	Bill Gibson	1101 Dolly Varden		Bill Gibson
1/30/16	Ron Kelly	1003 Dolly Varden		Ron Kelly
1-30-16	August Nielsen	1001 Dolly Varden		August Nielsen
1-30-16	Samantha Nielsen	1001 Dolly Varden		
1-30-16	Rachel Nielsen	1001 Dolly Varden		Rachel Nielsen
1-30-16	Barb Moore	907 Dolly Varden		Barb Moore
1/30/16	Richard Moore	907 Dolly Varden		
1/30/16	Letha Chandrani	905 Dolly Varden		
1/30/16	Michael Haynes	903 Dolly Varden		
1/31/16	Mike Lewis	909 Dolly Varden		Mike Lewis

We oppose the connection of Whitefish road between Quail Creek West and the proposed Breckenridge Park neighborhoods.

Date	Name	Address	E-Mail address	Signature
1/30/16	Heather Roberts	5104 Whitefish Dr.	[redacted]	
1/30/16	Elaine Jones	5201 Whitefish Dr	[redacted]	

We oppose the connection of Whitefish road between Quail Creek West and the proposed Breckenridge Park neighborhoods.

Date	Name	Address	E-Mail address	Signature
1/31	Jane Ledoux	5109 Sockeye Court	[redacted]	
1/31/16	Bryan Fuhs	5113 Lake Trout Ct		
1/31/16	Matt Martin	5111 Lake Trout Ct.		
1/31/16	Chad Pothoff	5109 Lake Trout Ct		
1/31/16	Dale Musser	5103 Lake Trout Ct		
1/31/16	Mike Pratt	5110 Lake trout Ct		

SINKHOLES

One of the concerns is the several identified sink holes in the area. A certified professional geologist has been consulted and said the proposed development area is a typical karst area, which is an area of limestone characterized by sinks, ravines, and underground streams with the potential for multiple sink holes. A sinkhole is a natural depression or hole in the Earth's surface. Sinkholes generally form through the natural process of underground streams causing erosion to surface layers. Once the erosion occurs and the water dissipates, the layers above the erosion can collapse into the voids causing a hole. However, these layers can also hold in place for years, and even after properties are constructed upon them. Unfortunately though, once the layers fail and a sinkhole occurs, property constructed upon the void will be damaged. And, in the worst cases, lives will be lost.

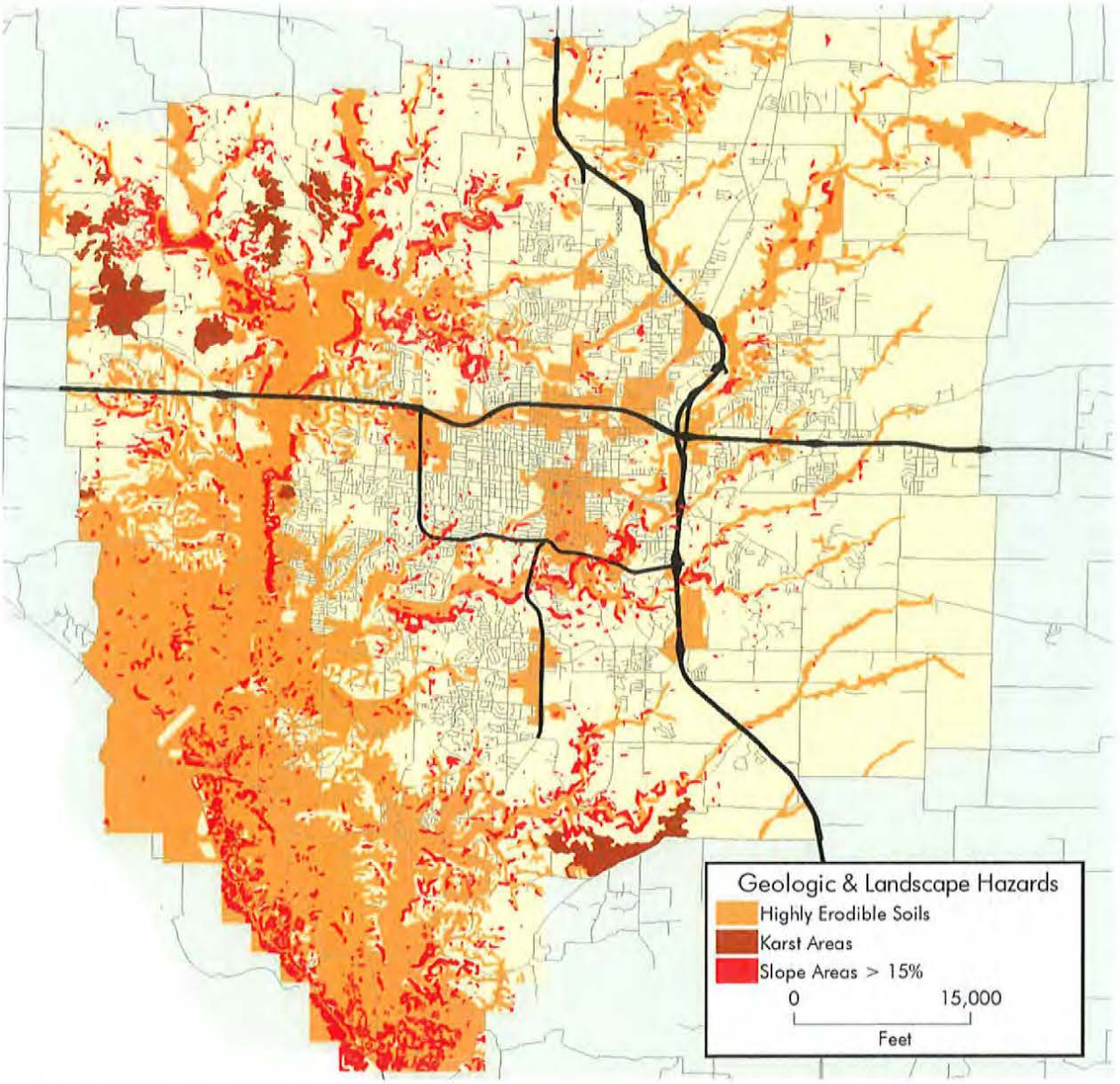
Although some sink holes have been identified in the construction limits, there could be many unknown, or as yet unformed, sink holes that will only be discovered during or after construction. According to the geologist, it is possible to fill in sink holes and construct over them, but it is risky as they could continue to collapse over time. Cost to homeowners for sinkhole insurance is $2,000 to $4,000 annually for a $200,000 home and the average claim exceeds $100,000. Also, most sink holes feed caves that could be located downhill of the site. Caves are highly sensitive to the amount and condition of water flowing into them underground. Aquatic and terrestrial life will be negatively impacted by either cutting off the water flowing to them or increasing the amount and quality of water from construction of hard surface roads and houses. The water flow of the known sink holes should be determined by completing die tracing surveys which will help identify undiscovered caves and determine the recharge area for those caves. Many caves in MO contain endangered species, and some contain the only known location in the world of particular species. It would be a shame and a Federal infraction under the Endangered Species Act if unknown species were wiped out because the city didn't take the time or spend the money to know what is being impacted.

The requirements outlined below should not be interpreted as all-inclusive, but at a minimum should be implemented before a decision is made to annex. The design of any subsurface investigation should reflect the size and complexity of the proposed project. The investigation should determine the nature and thickness of subsurface materials, including depth to bedrock and to the water table. Subsurface data may be acquired by backhoe excavation and/or soil boring. These field data should be supplemented by geophysical investigation techniques, deemed appropriate by a qualified professional. The data listed herein should be acquired under the direct supervision of a qualified geologist, geotechnical engineer, or soil scientist who is experienced in conducting such studies. Pertinent site information should be collected which should include the following:

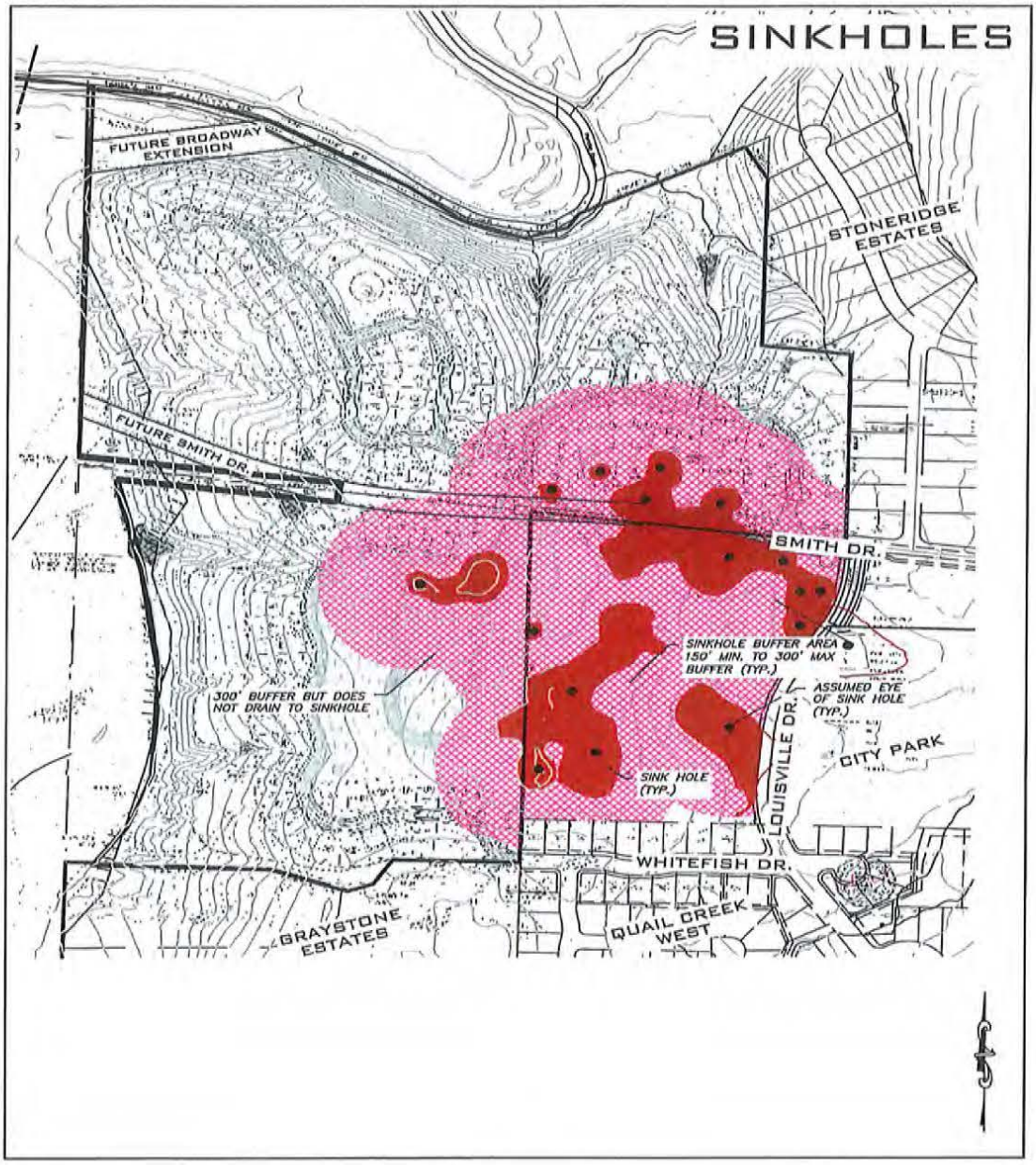
1. Bedrock characteristics (type, geologic contacts, faults, geologic structure, rock surface configuration).
2. Soil characteristics (type, thickness, mapped unit).
3. Photogeologic fracture traces.
4. Bedrock outcrop areas.

5. Sinkholes and/or other closed depressions.
6. Perennial and/or intermittent streams.

The "Columbia Imagined Plan" is the result of extensive work by the Comprehensive Plan Task Force and City of Columbia staff under the oversight of the Planning and Zoning Commission, input from consultants, and direction from the City Council and the public. The inventory of environmental resources identified within the City's Natural Resources Inventory (NRI) report, completed in 2010 is a key component of the Plan. The plan states "While the landscape of the study area is primarily composed of flat to gently sloping farms and grasslands, it also contains a variety of features that are particularly sensitive to development activities and impacts. Sensitive landscape features and characteristics are those that, when disturbed, might lead to hazardous conditions (i.e., safety issues) or environmental degradation problems (e.g., erosion and pollution). Three typical features and conditions that are classified as sensitive areas include karst topography, erodible soils, and steep slopes." As shown in the map below from the NRI report, The Breckenridge development site contains all three of these hazardous conditions.



"In the NRI area, the erodible soils are primarily concentrated along the Missouri river bottoms and bluffs and major riparian corridors, as are the steep slope areas. Two major karst areas are located in Rock Bridge State Park and northwest of the Midway area. A minor karst feature is found west of Scott Boulevard in parkland owned by the City of Columbia." As shown on the map, the minor karst feature found west of Scott Boulevard extends into Boone County to the west and the proposed Breckenridge development is completely within this karst area. There are several identified sinkholes within the proposed development and city ordinances may not adequately protect these sensitive resources. Half of the proposed PUD lies on a Karst formation that is specifically documented as sensitive. If the City did not annex this area and the developer was required to adhere to county ordinances, it would be virtually impossible to develop the area as has been proposed.


SINKHOLES
FUTURE BROADWAY EXTENSION
STONERIDGE ESTATES
FUTURE SMITH DR.
SMITH DR.
SINKHOLE BUFFER AREA 150' MIN. TO 300' MAX BUFFER (TYP.)
ASSUMED EYE OF SINK HOLE (TYP.)
300' BUFFER BUT DOES NOT DRAIN TO SINKHOLE
LOUISVILLE DR.
CITY PARK
SINK HOLE (TYP.)
WHITEFISH DR.
GRAYSTONE ESTATES
QUAIL CREEK WEST

The Boone County Stormwater Ordinance protects sinkholes with the following development setbacks:

(5) Buffer zone widths: The following buffer widths are required to reduce construction activities and retain the natural vegetative cover in unique and environmentally sensitive areas throughout the County.

A. Point Recharge Feature (Sinkholes): For a point recharge feature, the buffer zone coincides with the topographically defined drainage area, except that the width of the buffer zone from the edge of the sensitive area shall not be less than 150 feet, or greater than 300 feet from the sinkhole eye.

C. Sinkhole or Cave-Related Non-Buildable Areas: The Director may, based upon the topography, geology, soils, and history of the sinkhole(s) and/or cave(s) (such as past filling) and the engineer's storm water analysis, establish sinkhole or cave-related non-buildable areas. No grading or installation of parking areas, streets or other infrastructure shall be permitted within the said non-buildable area unless otherwise authorized by the Director.

HIGHLY ERODIBLE SOILS

Forested areas will also be impacted as the development plans to remove trees on steep erodible soils. Many of the areas planned for development exceed 20% grade and the soil is presently stable only because of the extensive root system of the old growth trees on these steep slopes. The few sediment basins planned will simply not be enough to keep these soils stable when you take away the natural ground cover and replace it with hard surfaces. Not only is it likely that rills and gullies will form on the steep slopes, but the Perche Creek floodplain will receive additional soil fill which could lead to flooding downstream. Many years ago, the upper region of the tract was cleared for agricultural use. The farmer that cleared the trees knew additional clearing of the adjacent steep slopes would cause the topsoil to erode away quickly and would then not be suitable to produce agricultural commodities.

The Natural Resource Inventory has classified the soils where much of the PUD and roads will be placed in the proposed development as Wrengart silty clay loam, karst, 5 to 14 percent slopes, eroded. These soils are not appropriate for construction of roads and houses as evident in the recent closure of Sinclair road which was constructed on similar type karst soils and needed major repairs when stormwater erosion occurred.

Figure 15.—Sinkholes in an area of Wrengart silty clay loam, karst, 5 to 14 percent slopes, eroded.

The soils in the forested area that the developer proposes to clear are even steeper and more prone to erosion than the upland previously cleared areas. These soils have up to a 25 percent slope and are only stable because of the extensive tree root systems. When the trees are cleared, it will be impossible to prevent formation of rills and gullies and sedimentation of the Perche Creek floodplain below. The only permanent best management practices proposed by the developer are a few sediment basins below the cleared area. Not only will these basins be inadequate to address the erosion issue, the basins placed on steep forested areas will be impossible to access for maintenance and removal of sediment that will quickly fill these basins. Once the basins are full of sediment they will fail and overtop the basin berms.

ENDANGERED SPECIES

One of the benefits of the existing trees is habitat created for the federally endangered Indiana and northern long-eared bats. These bats roost and protect their young in the loose bark of mature trees. If the trees are removed during the breeding season, the off-spring of the endangered bats will be killed if present in these trees. Even if the trees are removed outside the breeding season, important habitat for these species will be illuminated. The Federally endangered Indiana and northern long –eared bats are known to be found in this part of Missouri. The forested area to be removed by the development should be surveyed to determine if there is potential habitat for these species, and it's almost assured that habitat is present. If habitat is found, a mist net and acoustic survey should be completed to determine absence or presence of the bats and to discover if there are roost trees present. As mentioned earlier, the presence of caves recharged by sinkholes in the proposed development have not been identified. These caves likely will be habitat for important aquatic and terrestrial species and may contain some endangered species including the gray bat. Consultation with the US Fish and Wildlife service should be completed to determine mitigation measures necessary to reduce impacts to all these species.

ARCHAEOLOGY

A search of the State Historic Preservation Office GIS database shows three archaeological sites recorded on the property. Site 23BO357 is identified as a Native American burial mound site form. Two other sites within the construction limits of the development are described as multi-component, prehistoric sites and include artifacts of diverse types from several thousand years. These site records are over 50 years old and there has not been a systematic survey completed by a professional archaeologist. It seems probable that the tract includes archaeological remains of some kind; however, the extent, significance, integrity and artifact density remains unknown. Native Americans have their own records of prehistoric Native American site locations and in a letter from the Osage Tribe; the Osage Nation Historic Preservation Office actually identified two Native American burial mounds that could be destroyed with the development.

It is recommended the sites be surveyed and recorded by a qualified professional and consultation with tribes that have interest in Boone County should be conducted to address and mitigate impacts to culturally significant artifacts and remains. Mound sites with burials are protected under State of MO Statute, Section 194 and 214. Human burial sites are protected under MO Statute Section 194.410. Any person, corporation, partnership, proprietorship, or organization who knowingly disturbs, destroys, vandalizes, or damages a marked or unmarked human burial site commits a class D felony. If human remains were found during construction of the development, a Federal prosecutor could make the case that the City didn't complete due diligence by surveying four known archaeological sites for human remains and historic properties before annexing and approving construction.

THE OSAGE NATION
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Date: February 8, 2016

RE: Proposed Breckenridge Park Development

City Council of Columbia, Missouri
ATT: Council Member Ian Thomas
701 E. Broadway P.O. Box 6015
Columbia, Missouri 65205

Dear City of Columbia Council Members,

The Traditional Cultural Advisors Committee of the Osage Nation has serious concerns regarding cultural resources, protection of burials sites, the continuing destruction of sites and places of cultural significance in Missouri, and the effects of this destruction on the cultural identity of the Osage people today. Cultural resources are revered by the Nation and are a connection to our past and integral to our cultural identity, sense of self, and future well-being.

As you may be aware, modern development has the potential to destroy valuable cultural resources and adversely affect others. The "Breckenridge Park" development proposed by Thompkins Homes & Development, Inc. plans to build residential units at prehistoric Osage site locations. Several sites, including two burial mounds, would be destroyed should the City of Columbia grant this petition to annex and rezone the area to allow for construction. After consulting with the Osage Nation Historic Preservation Office, and hearing from concerned citizens in Columbia, the Traditional Cultural Advisors Committee strongly advises against the annexation and rezoning of the tract of land that includes burial mounds. Should this project move forward, any knowing disturbance or destruction of these burials will be in direct violation of Chapter 194 of the Missouri Statute on unmarked burials, a class E felony offense.

The Osage Nation is opposed to any destruction of our ancestral sites. The burial mounds and other cultural resources within the proposed construction area must be protected. These sites are of ongoing cultural, traditional, and spiritual importance to the Osage people and cannot be destroyed or devalued in any way.

Sincerely,

Chairman George Shannon
Traditional Cultural Advisors Committee

Osage Nation Traditional Advisors Committee | 627 Grandview Avenue, Pawhuska, OK 74056 | Office: 918-287-5328

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Sincerely,

Chairman George Shannon
Traditional Cultural Advisors Committee

Statement of Jane Ledwin
Regarding Proposed Breckenridge Development
March 2016

Thank you for the opportunity to present these comments. I would like to discuss a number of my concerns regarding the proposed annexation, rezoning and development, and urge you to defer annexation and rezoning of the proposed tract for the Breckenridge Development. I moved to Quail Creek West four years ago and have enjoyed the neighborhood, amenities and surroundings. In fact, in choosing a place to live, I looked at many aspects, including location. I was excited to find this neighborhood at the edge of the city, near undeveloped spaces and parks. At the time, I had every expectation that it would remain so for some years based on our community's vision: *Columbia Imagined*.

Columbia Imagined: The Plan for How We Live and Grow, is intended to guide future development, and help Columbia remain one of the most highly regarded cities in the country. It notes:

> To truly embrace the desires of maintaining the quality of life and small-town feeling of Columbia while at the same time accommodating projected housing and population needs, alternatives to the traditional standards of development should be investigated. (p 131)

Columbia Imagined explores and endorses those alternatives, reflecting the hard work and good faith efforts of thousands of residents framing their values, priorities, and concerns as Columbia continues to grow and attract more families and businesses. I was proud my community developed this approach to foster wiser public investment in infrastructure, greater public safety, and more livable communities.

The plan lays out a number of important physical, environmental, geographic, demographic, and economic considerations that should be weighed in future land use and development decisions. You can imagine my surprise when I found out from a neighbor about the proposed Breckenridge Development that would dramatically increase residential units in an area that is beyond the designated Urban Service Area, literally off the map.

The Urban Services Area was designed to guide "where services may be realistically provided at a fair cost to citizens..."(p.129) and to discourage growth beyond it supporting orderly development. It also dovetails with the Three-tier Growth Priority Areas identified for Columbia:

1.) Prioritize infill within exiting city limits
2.) New development supported by public infrastructure investments within urban services area.
3.) Low priority growth area outside of urban services area.

The proposed subdivision would clearly fall outside the first two tiers and is at odds with the principles of Livable and Sustainable Communities noted in the document, i.e., "encourage compact neighborhoods with access to work places, services and gathering places....and discourage sprawl." (p 120). Currently outside city limits, the proposed development would be over mile away from the nearest bus stop, and most businesses, shopping areas, schools, health clinics and banks would be a two-mile+ walk across busy Scott Blvd with marginal sidewalks. It is proposed in an area that really requires car transportation and additional infrastructure investment and maintenance. In addition, the anticipated additional traffic would be extremely taxing to the surrounding streets affecting public safety and convenience. Two major transportation decisions (i.e., CATSO) regarding access west of Columbia via Smith Drive and West Broadway are pending. It is imprudent to potentially foreclose viable, efficient options for these by prematurely approving the proposed development.

At the time of *Columbia Imagined*, there were 5,105 acres within the Urban Services Area available for development, to potentially support 13,364 housing units. This was considered to be "more than enough to accommodate the estimated 20-year housing demand..."(p 134). In fact there is an approved develpoment (Westbury Village) at the corner of Scott and Smith that includes residential, PUD, and commercial space, that has yet to be developed. I understand the traffic associated with that development has not been accounted for in the evaluation of the Breckenridge proposal. Given the lengthy development of that project, there would seem to be no apparent rush to annex the subject property and rezone for development. Especially prior to a rigorous evaluation of all permitted development that would use these streets.

Columbia Imagined also provides an Environmental and Land Use Vision

> Land use planning will incorporate planning for preservation of the natural environment (including scenic views, natural topographies, rural atmosphere, watersheds, healthy streams, natural areas, native species, wildlife corridors, preservation of green space, and the development of greenways and unique environmentally sensitive areas), agricultural areas, and cultural resources....."(p131)

The proposed tract had significant landscape constraints as well which were clearly laid out in *Columbia Imagined.* The proposed development is located in an area that a several physical characteristics that pose real threats to construction and long-term maintenance: steep slopes, karst topography, sinkholes, and floodplains. The subject tract is the only place in the City beside Rock Bridge State Park that has karst geology. This is an extremely sensitive rock layer that provides important water quality functions, may support unique and rare subterranean communities, and is extremely vulnerable to physical and chemical threats. In fact, over the last few years, we've seen numerous cases nationally of houses falling into sinkholes with loss of life and property. The City recognized this vulnerability in development considerations adjacent to the state park, and this tract should receive at least the same level protection. In addition, this area has slope of over 15 percent and highly erodible soils, presenting further challenges to development. All these features should be red flags for dense residential development.

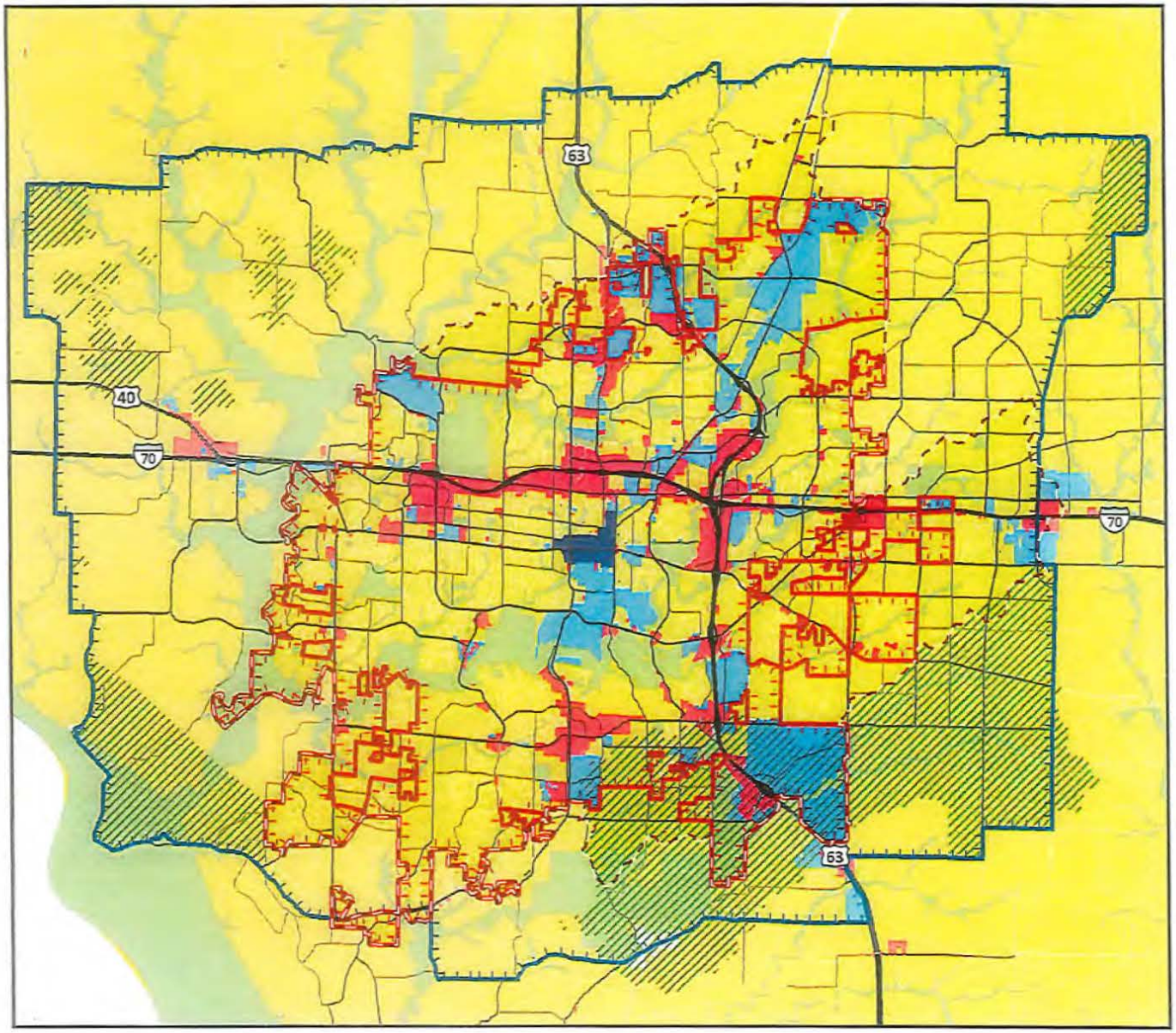
Currently, the area is prime farmland along a scenic ridge overlooking the Perche Creek floodplain. It supports significant, mature climax forest, much of which would be lost to clearing for the development. These forests along floodplains support hundreds of species of song birds, reptiles and amphibians, and rare species, including federally listed bats. They provide essential breeding and migration corridors in an increasingly urban landscape and are threatened with continued fragmentation and degradation. In addition, I understand there are plans for a trail along Perche Creek some time in the future. Given the significant environmental constraints on this property, and it's unique combination of rare and sensitive environmental features, the City should seriously consider the area perhaps as a future park, parkway, or certainly a far less dense development that recognized these qualities.

Finally, I wish to note my surprise and disappointment that as a nearby resident I was not notified of this development. It is only responsible to notify residents that have no choice but to use the roadways (i.e., Whitefish Drive our only access to anywhere), thoroughfares, and schools that will be affected by this development. I am unaware of any previous efforts on the part of the developer or the city to notify or solicit public input beyond an inadequate minimum distance from the project footprint. This is not only ill-advised and unfortunate, but irresponsible. In the absence of that input, *Columbia Imagined* is the most relevant guidance our community provided to the City regarding future growth and development. We should honor those efforts and commitment to an effective, responsible approach to public investment, public safety, and community livability. Has the City approved another subdivision outside the Urban Service Area since the plan? I believe this proposal may set a poor precedent in essentially abandoning that vision. We have a painstakingly developed our plan. Now let's implement it.

Given the numerous issues associated with the proposed Breckenridge Development, I urge you to table annexation and rezoning to better consider these issues in greater depth, allow transportation decisions to be made, and allow the public to weigh in on the proposal.

Respectfully submitted –

Jane M. Ledwin
March 17, 2016



Future Land Use

- Neighborhood District
- Commercial District
- Employment District
- City Center
- Open Space/Greenbelt
- Sensitive Areas
- City Limits
- Urban Service Area
- CATSO Metro Boundary

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Miles

City of Columbia - Community Development
EDD 4/30/2013


PROPOSED
BROADWAY
BRECKENRIDGE PARK
WHITE FISH
LOUISVILLE
SMITH DR
SCOTT BLVD
N

Columbia Area Transportation Study Organization (CATSO)

CATSO was established in 1964 and is comprised of a coordinating committee (policy arm) and a technical committee (reviews the technical components- working arm). The technical committee meets and works on the CATSO and the coordinating committee makes the decisions. The CATSO includes a long range transportation plan (LRTP) which is comprised in part of the major roadway plan (MRP).

THE CATSO demands and expects public participation and the right of constiuents to be heard. In fact, the CATSO has a Public Participation Plan that follow the 3C plan of cooperative, comprehensive and continuing. The plan states public participation is a critical component of transportation planning. It is driven to give people the opportunity to be heard- hopefully in advance of the CATSO making decisions. In addition, the 2040 CATSO long range transportation plan ensures citizen input in the process. Simply put- the public has the right to be involved.

These concepts of public participation and involvement are being tested today with the development of the proposed Breckenridge Park subdivision. The proposed development is outside the urban service area and has impact to the CATSO West Broadway extension to UU and I-70.

The existing MRP includes a future Broadway extension to provide a link across Perche Creek to Route UU linking Columbia area traffic to I-70. AT the August 5, 2015 CATSO technical meeting, staff presented a report on the future Broadway major arterial extension and suggested to remove the future extension in part because of extensive cost and topographic constraints. The committee was opposed to the Broadway removal. The committee did reach a consensus that revising the existing CATSO 2040 Long – range Transportation Plan to include a narrative to justify the inclusion of the of the future Broadway extension project was appropriate. The following language was added on August 27, 2015:

"There are two illustrative projects shown for the City of Columbia. One is Scott Boulevard extension and new interchange with Interstate 70. The second project is the Broadway major arterial extension, which would extend Broadway west from its current terminus across Perche Creek to link to Route UU. This project was added as an administrative revision in December, 2015. There is CATSO committee support for its inclusion as such a project, despite the lack of projected revenue for its implementation during the plan period. While no detailed engineering studies have been done for a proposed alignment, a tentative estimate for construction of an extension would be in the $10-20 million range."

The language was approved as a December 2015 revision.

Then along came the Breckenridge Park subdivision proposal which sits to the south of the Broadway extension corridor. The proposal includes an extension of Smith Drive-classified as a neighborhood

collector street. City staff had discussions about aligning Smith Drive on the preliminary plat such that a future extension of the street across Perche Creek could be a possibility. The current Broadway extension cuts across the northern portion of the preliminary plat. The city staff included the idea of potentially depicting a future Smith Drive extension as a replacement extension across Perche Creek as currently set out in the MRP(with no public input). This position by the city staff was understood by Crockett Engineering in its letter of February 22, 2016 when it stated "per the information provided by Traffic, Broadway will no longer be required to extend through this site. We understand the CATSO Plan shows differently however we are resubmitting the plat with the understanding that Broadway will no longer be needed." Clearly, the city staff has continued its interest in removing Broadway and even had conversations with the builder to indicate this was going to occur.

In a February 22 CATSO technical memo, the staff indicated the Smith Drive option was shorter and less expensive than the Broadway extension. However, the city staff recognized that many of the topographic, environmental and cost issues exist with the Smith extension. At the February 3,2016 meeting the Technical Committee gave an extensive review of including a Smith Drive collector extension to the MRP- including it be used as a substitute/replacement for a Broadway extension. The County indicated it was not opposed to the addition of a future Smith Drive collector street extension to the MRP as long as the future Broadway major arterial extension now shown on the MRP was maintained. A revised alignment for a future Smith Drive has been prepared by the Public Works staff. The Technical Committee passed a motion to recommend to the Coordinating Committee that it give consideration to approving the addition of a Smith Drive collector Street extension to the MRP. If the Coordinating Committee wants to give formal consideration for this addition it should direct the staff to schedule a PUBLIC hearing on May 26, 2016.

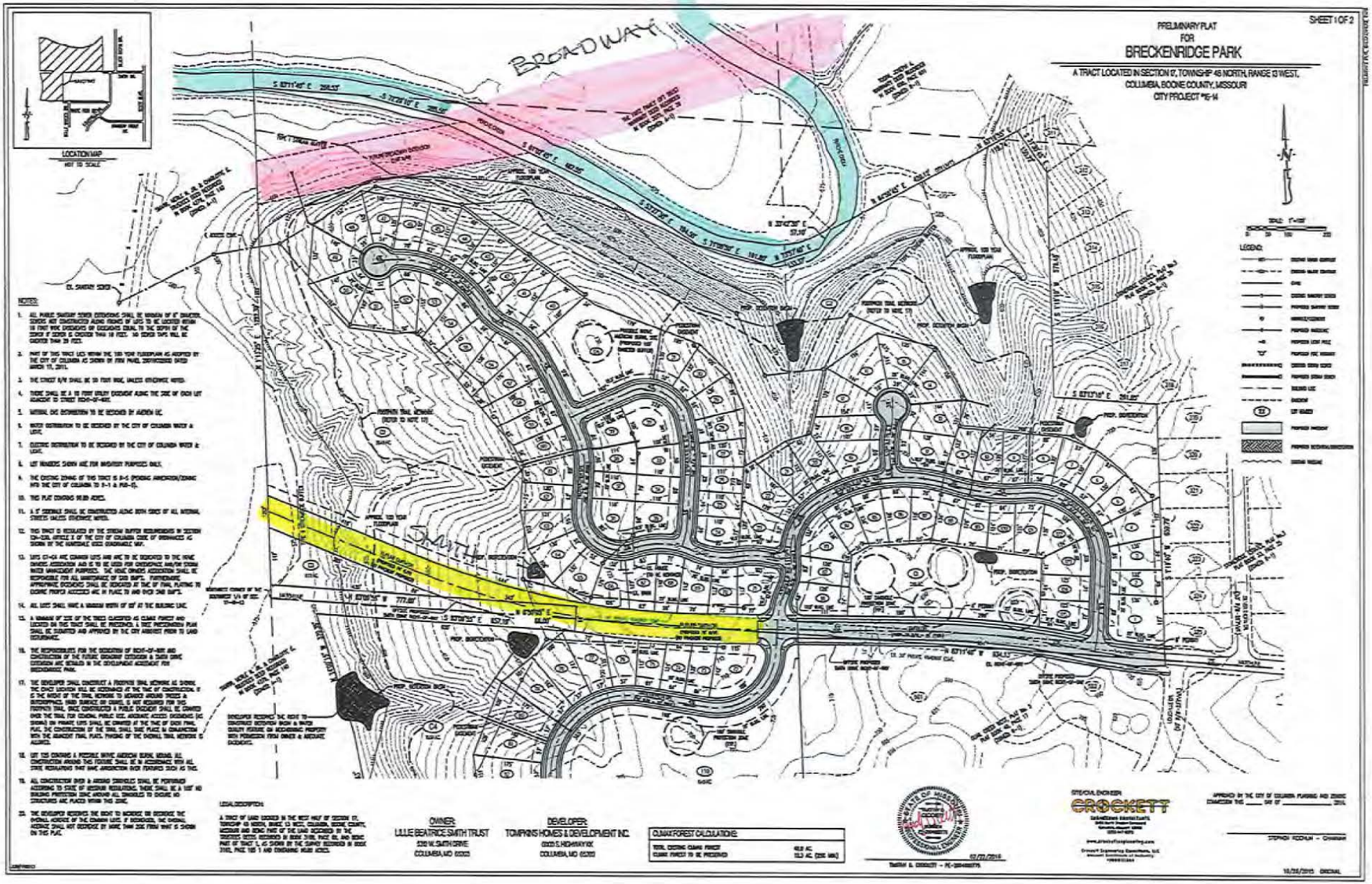
In summary, the city staff has attempted to either remove the Broadway extension or add the Smith Drive extension since August 2015 with no public input. In fact, Crockett Engineering was led to believe it did not have to show the Broadway extension when it submitted its preliminary plan to the city. I believe this has been corrected and now the plat shows both-although the Coordinating Committee has not approved Smith Drive (so it is fair to ask-why is it even on the plat).

I do not know whether the Smith Drive extension is a better route or not. But I do know that several issues need to be considered prior to making this change including but not limited to:

1. The coordinating Committee rejected moving Broadway off the list for a reason-why?
2. Using Smith Drive – a collector street (width, thickness) to replace Broadway- an arterial street,
3. Topographical issues,
4. Environmental issues,
5. Cost issues, and
6. Safety issues

It is apparent to me that the city staff not only want this change but are acting like it has already happened. Of course, with no public input whatsoever-in violation of the intent clearly laid out in the CATSO. The many issues that are involved in such a change should be studied, considered and then presented to the Coordinating Committee for its consideration in a process that allows public input. It should not be jammed into reality by approving a preliminary plat and development and thereby making it so without the process being allowed to move forward.

This area is outside the urban service area and directly impacts the CATSO. I am asking that the Commission hold off making a decision on the zoning and plats until the CATSO process –including public input- occurs on May 26, 2016.




KFOOT
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BROADWAY
SYRAWN
SMITH
GEORGETOWN
CHAPEL HILL
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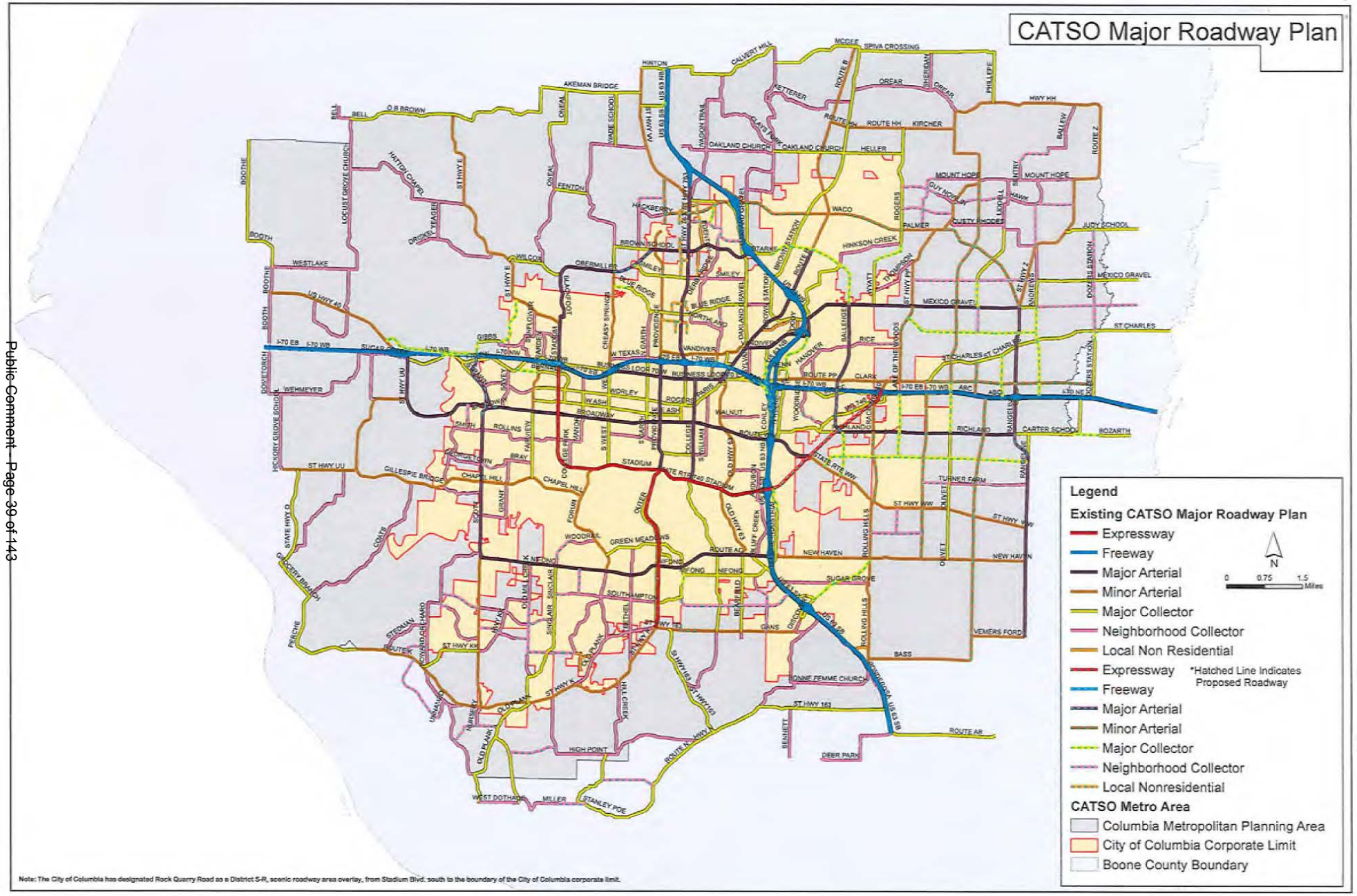
GILLESPIE BRIDGE


CATSO Major Roadway Plan
Legend
Existing CATSO Major Roadway Plan
Expressway
Freeway
Major Arterial
Minor Arterial
Major Collector
Neighborhood Collector
Local Non Residential
Expressway
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Major Arterial
Minor Arterial
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Local Nonresidential
*Hatched Line Indicates Proposed Roadway
CATSO Metro Area
Columbia Metropolitan Planning Area
City of Columbia Corporate Limit
Boone County Boundary
N
0 0.75 1.5 Miles
Note: The City of Columbia has designated Rock Quarry Road as a District S-R, scenic roadway area overlay, from Stadium Blvd. south to the boundary of the City of Columbia corporate limit.

Planning and Zoning Members,

My Name is Travis Bleying and I live at 5108 Grayling Ct.

I am concerned with the Annexation of this property into the City of Columbia.

Currently, the Boone County Storm water Regulations provide some protection for this environmentally sensitive area by providing 300 foot radius buffers for the Sinkholes. The development is only proposing a 50 foot radius buffer.

The Boone County Subdivision Regulations also provide protection for Community Assets such as Burial sites and large trees. There are two known burial sites known by the Osage Indians and there are at least two trees that meet the 75% of the diameter of the state champion tree for that species requirement, which the development would remove. The Development only shows one burial site and does not recognize or identify trees that are community assets as defined by the County's Regulations.

By annexing the property to the City of Columbia, these existing protections are lost because the City of Columbia has no regulations for Community Assets or protection buffers for Sinkholes.

At the very minimum the City should require the development to follow the Boone County Rules. This could be done thru the Annexation/ Development Agreement that the City Attorneys are preparing.

The following exhibits are included for your reference:

- Excerpt from the Boone County Storm Water Regulations
- Excerpt from the Boone County Subdivision Regulations
- Exhibit showing Breckenridge Park overlaid with the Sinkhole depression shown in red and the County required buffer shown in red hatch.
- Exhibit showing Breckenridge Park overlaid with the Trees likely to be removed for the development including two trees that would be protected by the County Regulations.

4.6 Environmentally Sensitive Areas: Enhanced Criteria

This section shall be applicable to all land development, including, but not limited to, site plan applications, subdivision applications, and grading applications, in or draining to an environmentally sensitive area that disturbs more than 3000 square feet.

(1) These provisions apply to any stormwater discharge or drainage on new development or redevelopment sites within Boone County that meets one or more of the following criteria:

A. Within 1000 feet of and draining to a losing stream*, Outstanding National or State Resource Water*
B. Within 100 feet of a Class P Stream*, or Type 1 stream per the Stream Buffer Regulations
C. Within 1000 feet of and draining to, or changes the site hydrology of, a jurisdictional wetland as defined by the U.S. Army Corps of Engineers; or
D. Runoff that discharges to a groundwater point recharge feature such as a sinkhole or other direct conduit to groundwater such as a cave.

*See listings in Missouri Water Quality Standards 10 CSR 20-7.031. This information is also provided in the Boone County Stormwater Design Manual – Appendix C.

(2) **Land Disturbance Permit Threshold Lowered:** When any of the above conditions exist, permitting related to land disturbance, stormwater management and water quality control will be required for any land disturbance greater than 3000 square feet.

(3) **General Stormwater Management:** Drainage patterns for proposed development must be designed to protect sensitive areas from the effects of runoff from developed areas, and to maintain the drainage areas of groundwater recharge features in a natural state. Special controls must be used where necessary to avoid the effects of erosion, sedimentation, and/or high rates of flow.

(4) **Buffer zone limitations and prohibitions:** The natural vegetative cover must be retained within a buffer zone described in this section. All construction activities including grading and filling are prohibited. Additionally, wastewater disposal or irrigation is prohibited.

(5) **Buffer zone widths:** The following buffer widths are required to reduce construction activities and retain the natural vegetative cover in unique and environmentally sensitive areas throughout the County.

A. Point Recharge Feature (Sinkholes): For a point recharge feature, the buffer zone coincides with the topographically defined drainage area, except that the width of the buffer zone from the edge of the sensitive area shall not be less than 150 feet, or greater than 300 feet from the sinkhole eye.
B. Wetlands: For a wetland, the buffer zone shall be at least 50 feet.

C. Outstanding Resource Waters/Losing Streams: For national or state outstanding resource waters, the buffer zone shall be twice that of the stream buffer requirement. (Chapter 26 Boone County Zoning Regulations)
D. Other Features: For other environmentally sensitive areas, the buffer zone shall be at least 50 feet.

(6) **Wetland Protection:** Wetlands meeting the Army Corps of Engineers definition of a jurisdictional wetland must be protected in all watersheds. Protection methods for wetlands include:

A. Appropriate setbacks that preserve the wetlands or wetland functions;
B. Wetland mitigation, including wetland replacement;
C. Wetland restoration or enhancement.

The Director may approve the removal and replacement of a wetland as approved by the U.S. Army Corps of Engineers or the elimination of setbacks from a constructed wetland that is primary use is for water quality control.

(7) Sinkhole/Cave Protection:

A. **Sinkhole Evaluation:** The developer/owner of any development that will discharge runoff to a sinkhole shall submit a Sinkhole Evaluation during the pre-application meeting or preliminary plat/plan review. A professional engineer or professional geologist must complete a sinkhole evaluation, with the following information.

i. Drainage area map
ii. Details of the drainage path of the discharge from the development to the sinkhole (offsite sinkholes)
iii. Sinkhole boundary map based on topography
iv. Geological Evaluation

B. **Geological Evaluation:** A professional geologist or a professional engineer with a demonstrated expertise in geotechnical applications is required to prepare a geologic evaluation of off-site sinkholes to determine the structural integrity of the geology, and the stability of the formation. The geological evaluation shall provide the following information:

i. Identification of all sinkholes as depression or collapse sinkholes.
ii. A map of the topographic rim (highest closed contour) of all depression sinkholes, based on a 2-foot contour interval or less.
iii. A map of all depression and collapse sinkholes contributing to the groundwater recharge of the area.
iv. A map showing no-build areas for buildings and other structures based on topographic and geologic rims of depression and collapse sinkholes.
v. Detail of proposed stabilization of collapse sinkholes, if applicable.

C. **Sinkhole or Cave-Related Non-Buildable Areas:** The Director may, based upon the topography, geology, soils, and history of the sinkhole(s) and/or cave(s) (such as past filling) and the engineer's storm water analysis, establish sinkhole or cave-related non-buildable areas. No grading or installation of parking areas, streets or other infrastructure shall be permitted within the said non-buildable area unless otherwise authorized by the Director.

This non-buildable area shall follow the limits of the sinkhole in most cases. However, the non-buildable area may be expanded or contracted by action of the Director where warranted, due to the nature of the specific sinkhole or cave, the underlying geology, soils, drainage, and any related information, such as depth to bedrock.

In sinkhole cluster areas, the Director may require the developer to provide recommendations from a consulting engineer and a consulting hydrogeologist, based upon substantial and state-of-the-art field studies and evaluation of the specific sinkhole or cave system. These studies shall be submitted to the Director

D. **Development in Sinkhole Drainage Areas without Discharge to Sinkhole:** Development may occur in the immediate sinkhole drainage area if the developer provides alternative surface drainage away from the sinkhole, while keeping the water in the same surface drainage basin, and providing that the water shall not go into another sinkhole drainage area off the applicant's property. The immediate sinkhole drainage area (or portion thereof) which cannot be provided with an alternative drainage system can be deleted from the development area for calculations utilizing this information to meet regulatory requirements.

E. **Development in Sinkhole Drainage Areas with Discharge to Sinkhole:** For portions of the sinkhole drainage area where alternative surface drainage methods cannot be provided, the sinkhole can be used for limited surface runoff drainage of a proposed development if the following conditions are met:

i. That the runoff from the development area is either completely retained in a retention basin or detained in a detention basin. The flow rate out of the above basins shall be regulated so that it is no greater than the flow rate into the sinkhole of the development area prior to development.

ii. Enough runoff is diverted from the sinkhole drainage area so that the development of the remaining area does not increase the total quantity or deteriorate the water quality of runoff into the sinkhole. Where additional runoff is anticipated, a consulting engineer and hydrogeologist shall evaluate and show the effect of any additional quantity of runoff to the sinkhole and sinkhole system. The Director shall review the study findings and make a determination that the plan is acceptable.

iii. Where the sinkhole outlet is off site, either the runoff leaving the subject property must be shown to be no greater in flow or in quantity than that which existed before development, or easements must be obtained from owners of property where any increase in flow or quantity of water must go to reach the sinkhole outlet. Easement areas shall be approved by the Director based upon the developer's engineer's calculations of the proposed ponding elevation.

F. **Filling in sinkholes and sinkhole drainage areas:**

i. No street shall be placed below an elevation of at least one (1) foot above the sinkhole ponding elevation and only when collapse of the sinkhole will not adversely affect the road.

ii. No increase in the ponding elevation will be allowed by grading or filling without a storm water analysis approved by the Director.

iii. It shall be unlawful for any person to place, dump or deposit trash, debris, rubbish, brush, leaves, grass clippings, yard waste, hazardous waste or similar materials within a sinkhole.

G. **Grading or alteration of land near or over Sinkhole:** The alteration of land in a sinkhole by means of grading or the use of motorized equipment without a permit is a violation of this ordinance.

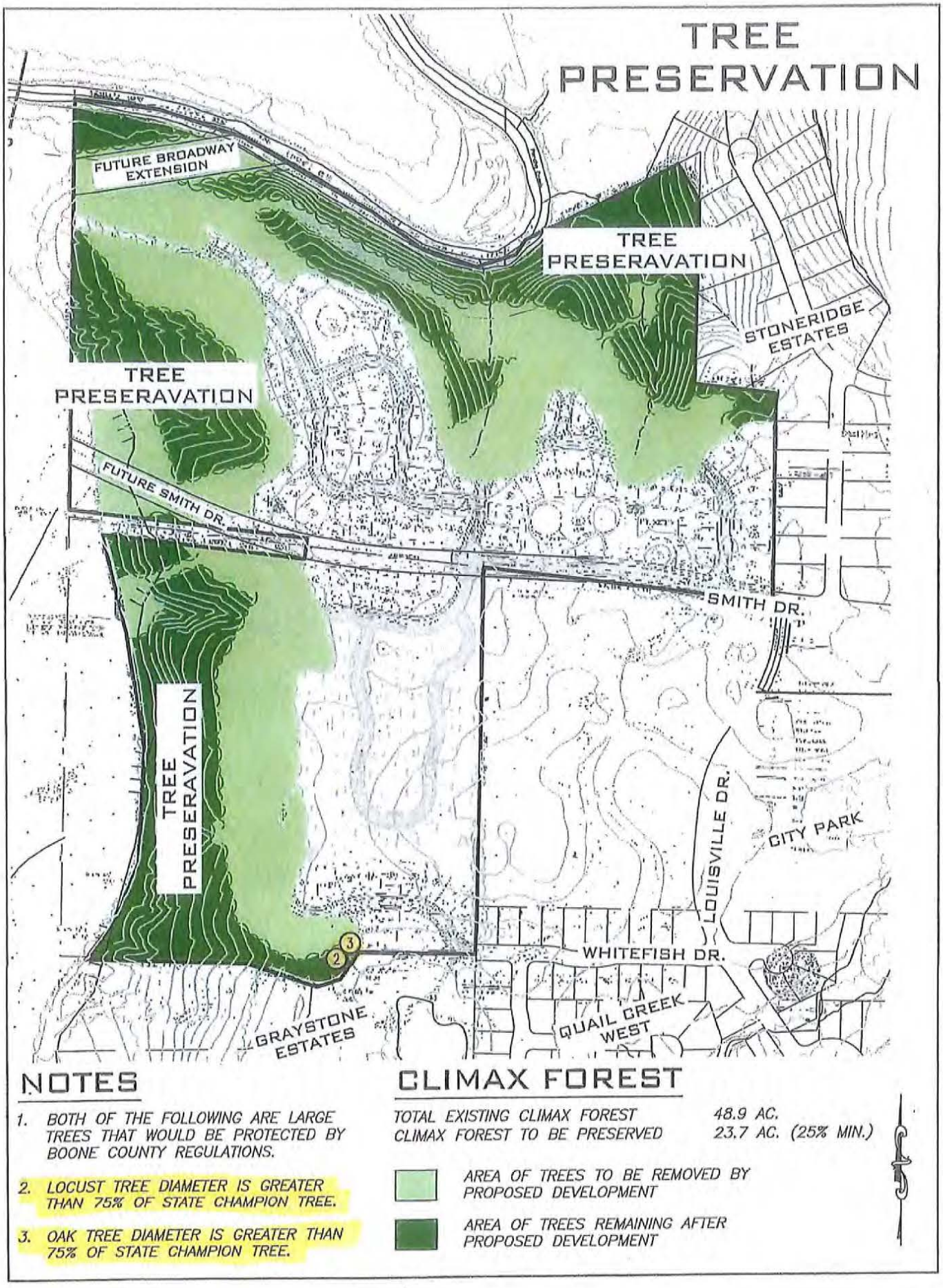
lots by means of a paved thirty foot wide public road separated from the arterial or expressway by using a planting strip at least 30 feet in width and connecting it at infrequent intervals with the arterial or expressway, or, b) by designing double frontage lots.

1.4 ***Common Land*** - When common land is to be included in or adjacent to a subdivision or development, a private trust agreement shall be recorded concurrently with the plat which shall provide for the proper and continuous maintenance and supervision of said common land by a trustee and payment for such maintenance and supervision by means of annual or more frequent assessments against lots and provision for assessment secured by assessment liens enforceable by foreclosure. No common land shall be dedicated to public use or otherwise conveyed to the public or any public agency or other public or private entity without recorded contractually binding agreement conferring financial responsibility and liability for maintenance and supervision of such common land with any such agency or entity.

1.5 ***Community Assets*** - In designing any subdivision, the following specific areas shall be protected and preserved: a) tree(s) identified as Missouri champion trees by the Missouri Department of Conservation or any tree(s) seventy-five (75%) or larger of the circumference of the largest known species of such tree in Missouri; b) sensitive plant species and high quality natural communities as compiled by the Missouri Department of Conservation in the Natural Heritage database for Boone County; c) sites listed on the National Register of Historic Places, and d) cemeteries and burial grounds.

1.6 ***Sink Hole Area Development*** - Any portion of land which is located within the limits of a designated sink hole area as shown in the Boone County Zoning Regulations adopted September 1991 shall be subdivided and developed to insure that the plat is designed to minimize the flow of stormwater into and erosion of areas in and around


SINKHOLES
FUTURE BROADWAY EXTENSION
STONERIDGE ESTATES
FUTURE SMITH DR.
SMITH DR.
SINKHOLE BUFFER AREA 150' MIN. TO 300' MAX BUFFER (TYP.)
300' BUFFER BUT DOES NOT DRAIN TO SINKHOLE
ASSUMED EYE OF SINK HOLE (TYP.)
LOUISVILLE DR.
CITY PARK
SINK HOLE (TYP.)
WHITEFISH DR.
GRAYSTONE ESTATES
QUAIL CREEK WEST



NOTES

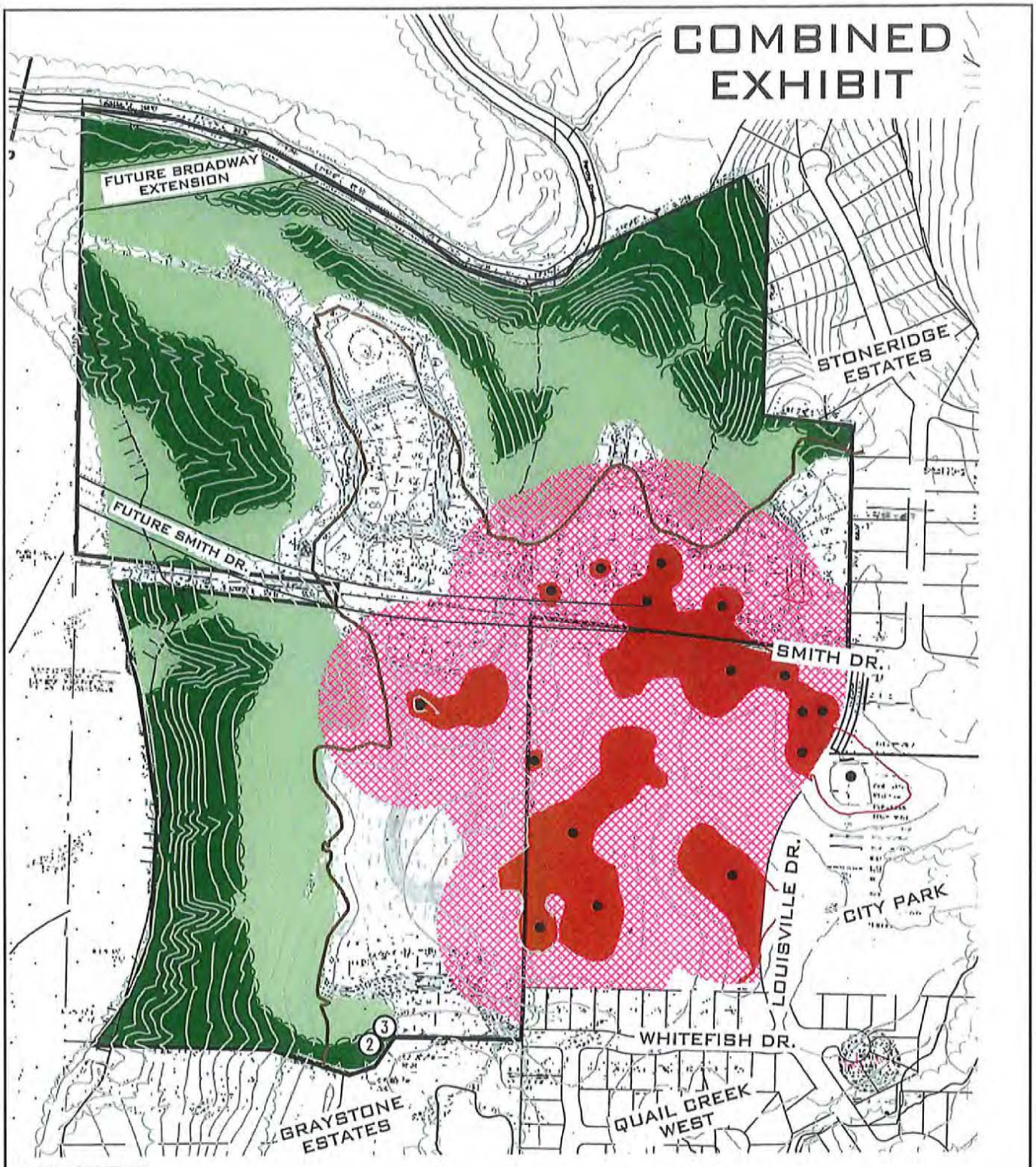
1. BOTH OF THE FOLLOWING ARE LARGE TREES THAT WOULD BE PROTECTED BY BOONE COUNTY REGULATIONS.
2. LOCUST TREE DIAMETER IS GREATER THAN 75% OF STATE CHAMPION TREE.
3. OAK TREE DIAMETER IS GREATER THAN 75% OF STATE CHAMPION TREE.

CLIMAX FOREST

TOTAL EXISTING CLIMAX FOREST	48.9 AC.
CLIMAX FOREST TO BE PRESERVED	23.7 AC. (25% MIN.)

AREA OF TREES TO BE REMOVED BY PROPOSED DEVELOPMENT

AREA OF TREES REMAINING AFTER PROPOSED DEVELOPMENT



NOTES

1. BOTH OF THE FOLLOWING ARE LARGE TREES THAT WOULD BE PROTECTED BY BOONE COUNTY REGULATIONS.
2. LOCUST TREE DIAMETER IS GREATER THAN 75% OF STATE CHAMPION TREE.
3. OAK TREE DIAMETER IS GREATER THAN 75% OF STATE CHAMPION TREE.

Brekenridge Map

Map Legend

Sinkholes, MO DNR 2014

- Primary Sinkhole
- Primary w/ Additional Sinks
- Secondary Sinkhole
- Secondary w/ Additional Sinks
- Tertiary Sinkhole
- Tertiary Sinkhole w/ Additional Sinks
- Quaternary Sinkhole

Karst Prone Soils by Region, MO DNR 2008

National Wetland Inventory by Wetland Type, USFWS 2014

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7

Community Commons, 11/18/2015

Planning and Zoning Members

I would like to address the proposed Development of Breckenridge Park in relation to the connection of this development to Whitefish Drive.

Whitefish is a residential street that serves 85 lots, is 28 feet wide and allows parking on both sides of the street.

I understand a traffic study was performed by the development and it studied the delay at the intersection of Whitefish and Louisville Drive. However, the delay has never been an issue. The problem is Whitefish is too narrow, Too Curvy/Dangerous to allow more home to use it.

Currently Whitefish serves 85 lots and at 10 trips per day that is 850 trips per day that currently use Whitefish. The developer's traffic engineer has stated that at least 20 additional homes will use Whitefish as their primary access which will push the number of lots served by Whitefish to 105 lots or 1,005 trips per day. The Range for a neighborhood feeder (32 foot Wide Street) is 500 to 1500 trips per day. As you can see from the above, Whitefish is already carrying more traffic than it was designed for.

It is just a matter of time before a child is hurt on Whitefish.

The residents along Whitefish enjoy the right to park on both sides of the street. If allowed, the additional traffic on this street may cause the future loss of parking on both sides and possibly all parking to accommodate this development. That is not acceptable to the residents who purchased their homes with the right to park on the street.

We moved to the property with Whitefish already extended and finished as Graystone Drive which serves 7 large lots. There was no expectation that 168 lots would be connected to it. It appears complete and finished. We understand that a connection would provide another means for emergency vehicles to access our property but we understood Whitefish is our only access when we purchased our homes and chose the privacy afforded by the one connection over the enhanced safety vehicle access. Opening this street up to a through street is not acceptable to us.

I have attached the following signed petitions from my neighbors who oppose the extension of Whitefish Drive and also oppose the annexation of this property.

APPENDIX A

Design Standards for Streets, Sidewalks and Bikeways – 6/07/04

Purpose and Intent

The 2025 Transportation Plan established a functional classification system consisting of Major Arterials, Minor Arterials, Major Collectors and Neighborhood Collectors. In developing new design standards, it was determined that local residential and local non-residential streets should also be included. This provides for an integrated street system.

A roadway system must balance the conflicting goals of traffic movement and access to land. Arterials are primarily for the movement of through traffic; collectors provide equal attention to land access and through traffic; and local streets provide access to individual parcels of land at the expense of through traffic. Selecting the proper roadway design for each functional classification is vital to development of a system of roadways which provides the needed connectivity between all areas of the city as well as the capacity to handle future traffic volume.

Design elements encompassing right of way width, pavement width, number of travel lanes, bike lane width, use of curb and gutter, sidewalk and pedway width, parking, driveways, buffer strip width, and utility easements must be appropriately selected to provide the function, character, traffic volume and speed desired.

Major streets serve a development pattern that ranges from low density residential to intensely developed commercial centers and corridors. To meet such varied conditions and address neighborhood livability factors requires an array of design approaches. A "one standard fits all" is not consistent with traffic needs or the wide variety of situations encountered.

In several of the street types, an alternative design will be considered or may be required when conditions specified in the standards are found to exist. This language was drafted specifically to allow a design appropriate for the land use and traffic conditions being created by a proposed development. The alternative design may be requested by the developer or recommended by city staff or the Planning and Zoning Commission. Criteria are included to provide guidance in selecting the proper street design to match the expected conditions. If the alternative design exceeds the standard design for a particular street type, it shall be presumed to satisfy these requirements. In all other cases, the final decision shall rest with the City Council.

Application of Design Standards

The design standards are intended to result in a more predictable and acceptable outcome for street improvements. Due to the wide range of circumstances, however, the standards need to be applied with a certain amount of flexibility. Street construction activity consists of building completely new streets as well as making minor improvements to existing streets. Many existing streets will not be changed at all in the next several years while others will be candidates for additional lanes, intersection reconfiguration, or major reconstruction. Unlike new streets, existing streets have physical constraints to being retrofitted to meet new standards due to a narrow right of way or the proximity of buildings, utilities or mature trees. Additionally, adjacent property owners often voice concern about more traffic, speeding, noise, storm water runoff, and other issues.

2. Pavement: 28 feet wide measured from back of curb

3. Turnarounds: Terminal streets shall have a turnaround at the closed end with an outside right-of-way diameter of 94 feet and a roadway pavement diameter of 76 feet.

4. Drainage: Curb and gutter system.

5. Sidewalks: 5 feet wide on both sides constructed 1 foot inside the right-of-way.

6. Parking: Permitted on both sides of the street.

7. Buffer Strip: 5 feet wide with trees permitted in the right-of-way subject to compliance with city policies and regulations.

8. Utility Easements: 10 feet on both sides adjacent to the right-of-way. The city and public utility providers will not be responsible for the restoration of any landscaping placed within utility easements that is removed or damaged as a result of constructing, repairing or maintaining public utilities.

In place of the typical Residential Street, a request may be submitted at the time of preliminary plat review for approval of one or more of the following alternative streets:

A **Residential Feeder** will be considered or may be required when one or more of the following conditions exist: 1) the intended use and adjacent zoning allows duplex or multi-family dwellings; 2) the expected average daily traffic (ADT) exceeds 500; or 3) the street collects localized traffic within a subdivision and leads to a collector or arterial street. A Residential Feeder shall conform to the following design standards:

1. Right-of-way: 50 feet wide

2. Pavement: 32 feet wide measured from back of curb

3. Sidewalks: 5 feet wide on both sides constructed 1 foot inside the right-of-way.

4. Buffer Strip: 3 feet wide with only ornamental trees permitted.

5. Other Features: Same as a Residential Street

An **Access Street** will be considered when all of the following conditions exist: 1) the intended use and adjacent zoning is single-family detached dwellings; 2) the street is not longer than 750 feet, and 3) the expected average daily traffic (ADT) is less than 250. An Access Street shall conform to the following design standards:

1. Right-of-way: 44 feet wide

2. Pavement: 24 feet wide measured from back of curb

3. Turnarounds: Terminal streets shall have a turnaround at the closed end with an outside right-of-way diameter of 94 feet and a roadway diameter of 76 feet.

In place of the typical Non-residential Street, a request may be submitted at the time of preliminary plat review for approval of one or more of the following alternatives:

An **Option A** street will be considered when two or more of the following conditions exist: 1) the intended use and adjacent zoning is commercial, light industrial, office, and/or multi-family residential; 2) the expected average daily traffic (ADT) is less than 4,000; 3) the street is primarily intended to provide access to property and secondarily to serve through traffic; and 4) there is a nearby collector or arterial street to accommodate future traffic from surrounding land.

Option A streets shall conform to the following design standards:

1. Right-of-way: 60 feet wide

2. Pavement: 30 feet wide measured from back of curb

3. Parking: Not permitted on either side.

4. Other features: Same as a typical Non-residential Street

An **Option B** street will be considered when all of the following conditions exist: 1) the intended use and adjacent zoning is office and/or multi-family residential; 2) the street is not longer than 750 feet; 3) the expected average daily traffic is less than 1,000; 4) the street is intended to provide access to property and not serve through traffic; and 5) there is a nearby collector or arterial street to accommodate future traffic from the development of surrounding land.

Option B streets shall conform to the following design standards:

1. Right-of-way: 60 feet wide

2. Pavement: 30 feet wide measured from back of curb

3. Parking: Permitted on one side only

4. Buffer Strip: 9 feet wide with trees permitted as a typical Non-residential Street

5. Other features: Same as a typical Non-residential Street

An **Option C** street will be considered or may be required when two or more of the following conditions exist: 1) the intended use and adjacent zoning is intensive commercial and/or industrial; 2) the expected average daily traffic exceeds 4,000; 3) the street will serve a significant amount of through traffic; 4) the street will connect to two collector or arterial streets; 5) there will be a significant number of left turns to and from abutting driveways; and 6) there will be a significant amount of truck traffic.

Option C streets shall conform to the following design standards:

1. Right-of-way: 66 feet wide

2. Pavement: 38 feet wide measured from back of curb to provide for two 13' travel

5. Parking/Driveways: Not permitted on either side

6. Buffer Strip: 9 feet wide with trees allowed as for Option A streets

7. Other features: Same as Option A streets

Major Collector Street Design Standards

A **Major Collector** is a mid-volume, multi- modal street (average daily traffic of 3,500-8,500 vehicles) which collects traffic from several neighborhoods and moves the traffic to the arterial network. These streets provide access to retail centers, office complexes, institutional uses such as colleges and hospitals, and multi-family residential areas. Major collectors typically have two, undivided travel lanes with a left turn lane at key intersections. A two-way center turn lane or intermittent raised median may be provided to manage access at high traffic locations. Typically, direct access to one and two-family residences is prohibited with consolidated driveways allowed for other uses when controlled as to location. No on-street parking is permitted.

The design standard for a **Major Collector** street shall be as follows:

1. Right-of-way: 66 feet wide

2. Pavement: 36 feet wide measured from back of curb

3. Travel Lanes: Two lanes each 12 feet wide

4. Bike Lanes: Striped bike lane on both sides 6 feet from back of curb

5. Sidewalks: 5 feet wide on both sides constructed 1 foot inside the right-of-way.

6. Parking: Not permitted on either side

7. Driveways: Controlled as to location and width for access management purposes.

8. Buffer Strip: 9 feet wide with trees permitted in the right-of-way located 4 feet from edge of street and sidewalk subject to compliance with city policies and regulations.

9. Utility Easements: Same as a standard Residential Street

In place of the typical Major Collector, a request may be submitted at the time of preliminary plat review for approval of one or more of the following alternative streets:

An **Option A** street will be considered or may be required when the following conditions exist: 1) the intended use and zoning of nearby land is one or two-family residential and/or large open land areas such as parks, churches, and schools; and 2) the street is intended to serve through traffic and not provide direct access to property.

Option A streets shall conform to the following design standards:

1. Right-of-way: 66 feet wide

shopping areas, employment centers, and many residential neighborhoods. These streets have a minimum of two, undivided travel lanes but may have up to four travel lanes with a raised median and left turn lane at intersections to manage traffic access. Typically, direct access to property is restricted and no on-street parking is permitted.

Three types of Minor Arterial streets are permitted. Each type may be allowed or required depending upon the surrounding land use pattern, traffic conditions or other circumstances.

An **Option A** street will be considered or may be required when the intended use or zoning of nearby land is predominantly residential or large open land areas such as parks, churches, and schools. Option A streets shall conform to the following design standards:

1. Right of way: 84 feet wide
2. Pavement: Total width is 40 feet measured from edge of shoulder.
3. Travel Lanes: Two lanes, each 12 feet wide.
4. Paved Shoulder: 8 feet on each side for bikes and emergency parking.
5. Drainage: Open channel or swale system without curb and gutter.
6. Sidewalk: 5 feet wide on one side constructed 1 foot inside the right-of-way.
7. Pedway: 8 feet wide on one side constructed 1 foot inside the right of way.
8. Parking: Not permitted on either side.
9. Driveways: Controlled as to location and width for access management purposes.
10. Buffer Strip: 14-15 feet wide on each side. Trees permitted in the right of way when located outside of the drainage channel and 4 feet from edge of sidewalk or Pedway subject to compliance with city policies and regulations.
11. Utility Easements: Same as a standard Residential Street.

An **Option B** street will be considered or may be required when the following conditions exist: 1) the intended use or zoning of nearby land is residential or large open land areas such as parks, churches, and schools; and 2) the average daily traffic volume of the street is projected to exceed 15,000 vehicles in 20 years. Option B streets shall conform to the following design standards:

1. Right of way: 100 feet wide
2. Pavement: Total width is 40 feet measured from edge of shoulder.
3. Travel Lanes: One 12 feet wide lane on each side of a 12 feet center median.

6. Sidewalk: 5 feet wide on one side constructed 1 foot inside the right-of-way

7. Pedway: 8 feet wide on one side constructed 1 foot inside the right of way

8. Parking: Not permitted on either side

9. Driveways: Controlled as to location and width for access management purposes.

10. Buffer Strip: 14-17 feet wide on each side. Trees permitted in the right of way located 10 feet from edge of street and 4 feet from edge of sidewalk or Pedway subject to compliance with city policies and regulations.

11. Utility Easements: Same as a standard Residential street.

An **Option B** street will be considered or may be required when the projected average daily traffic volume of the street could reasonably exceed 20,000 vehicles in 20 years and/or the street connects to a freeway or expressway. Option B streets shall conform to the following design standards:

1. Right of way: 110 feet wide

2. Pavement: Total width of 52 feet measured from back of curb or edge of pavement

3. Travel Lanes: One 12 feet wide inner lane and one 14 feet wide outer lane on each side of a 16 feet wide center median which may include a 12' wide left-turn lane at intersections.

4. Bike Lanes: No bike lane on either side

5. Sidewalk: 5 feet wide on one side constructed 1' inside right of way

6. Pedway: 10' wide on one side constructed 1' inside right of way

7. Buffer Strip: 12-13 feet wide on each side. Trees permitted in the right-of-way located 8 feet from edge of street and 4 feet from edge of sidewalk or Pedway subject to compliance with city policies and regulations.

8. Other Features: Same as Option A

Requests for exceptions to the above design standards may be submitted at the time of preliminary plat review and shall be processed as a variance as provided by the Subdivision Regulations.

Neighbors Opposed to the Annexation of the Proposed Breckenridge Park Plan to the City of Columbia.

As members of the neighborhoods directly adjacent to the proposed Breckenridge Park subdivision we oppose the annexation of this property to the city for several reasons.

When families purchased property in this neighborhood we did not ever think that this property would be developed as a neighborhood. Quail Creek West property off of Dolly Varden St. is currently at the farthest western edge of the city. The proposed Breckenridge neighborhood is on property which is currently in Boone County and NOT within the bounds proposed to be developed in the Columbia Imagined plan.

This land has numerous disadvantages for development including numerous sink holes, steep slopes, Indian Burial grounds, lack of current infrastructure to support the amount of homes proposed and the additional burden of traffic on Whitefish road which is already at capacity.

The proposed Broadway extension to connect with UU requires the preservation of the corridor but also must allow for the grading required to build this extension. These same concerns exist for the preservation of the corridor for extending Smith Dr. The proposed plan by the builder does not currently take the grading of this property for these roads into consideration. CATSO is currently working to finalize the plans for these extensions. Annexation and re-zoning should be delayed until after CATSO has finalized the plans for the extension of these roadways to ensure that the proposed development provides ample space in which to build the extensions and also that the prospective homebuyer's property is preserved and that they are aware of the location of the proposed roadways.

Environmental concerns exist for the development of this property. Three archeological sites are recorded in the subdivision footprint, none of which have been professionally surveyed. These sites should be surveyed prior to annexation and re-zoning of this land so that care can be taken to properly preserve these sites. The unknown effects of soil erosion from removal of trees on steep slopes and the consequences that this may have on the Perche Bluff and watershed area are of great concern. The possible effects of water runoff into sink holes which may affect sensitive cave ecosystems are also of concern. Significant apprehension exists over the development of land with numerous known sink holes and the unknown effect the necessary topographical changes required for dense development would have on the stability of this land.

The proposal of zoning this property at PUD6 is concerning for several reasons. The current plan calls for utilization of a private street through this development with no sidewalks. Concern exists that emergency vehicles will not be able to access these houses when people park on the street and that children may be at risk when walking and playing in the neighborhood. If the argument for PUD6 zoning is to allow affordable housing, current access for public transportation is lacking and the closest grocery stores are 3 miles away.

Annexing this property to the city would directly contradict the guidelines of the Columbia Imagined Community plan to develop the city of Columbia and to utilize resources and maximize infrastructure within the existing city limits and set a precedent of annexing property outside of the Urban Service Area. However, if this property is to be annexed to the city and re-zoned, a zoning of A1 would seem more appropriate for this land. This would allow for less destructive development of the land and allow

for preservation of the corridors and grading requirements for the proposed roadways and a decreased volume of cars using already congested streets.

Members of the neighborhood feel that annexing this property into the city would significantly decrease our current quality of life and would adversely affect the peace, tranquility, and safety of the residents, as well as have possible long-term deleterious effects on the environment and land stability.

An argument against the annexation and zoning of the proposed Breckenridge development due to the prominence of steep slopes on the property.

In 2010, the City of Columbia published a Natural Resource Inventory whose intention was "to provide baseline data for the developed and undeveloped land in and around Columbia and the streams, trees, natural features, and hazards."

The key outcomes of the NRI as noted in the document are:
- documentation of the geographical location of resources
- display and summaries of existing data
- assessment of natural resource functions and conditions
- analysis of the inter-relationships between natural resources
- identification of the threats to the existing health and integrity
- provision of benchmarks against which future change can be measured
- identification of additional areas for further study
- incorporation of new or revised information from interested citizens

The City of Columbia views the data and maps in NRI report as follows:

"a significant resource for understanding existing conditions in and around Columbia. While previous illustrations have focused primarily on how land has been consumed, the NRI offers other valuable data and insights. The following sections explore what development limitations exist in the study area. These limitations influence how future land use patterns can or should be established."

Notes from the United States Department of Agriculture Natural Resources Conservation Service Soil Survey of Boone County, Missouri In cooperation with Missouri Department of Natural Resources; Missouri Agricultural Experiment Station; and United States Department of Agriculture, Forest service.

The United States Department of Agriculture's Soil Survey of Boone County Missouri, whose purpose is as follows:

"This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance "

In this study, it is noted on the map on the following page that there are two soil types that make up the steep slopes of the proposed Breckenridge development and they are the following:

- ***60012—Bardley-Clinkenbeard complex, 20 to 45 percent slopes, very stony***
- ***60038—Rocheport-Bonnefemme complex, 14 to 25 percent slopes***

Both of these types of soil have different characteristics that make them less suitable for different applications related to recreation, construction, forestry, wildlife habitat, etc. which is described as follows:

Numerical ratings in the table indicate the severity of individual limitations. The numerical ratings are shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

Not limited 0.00

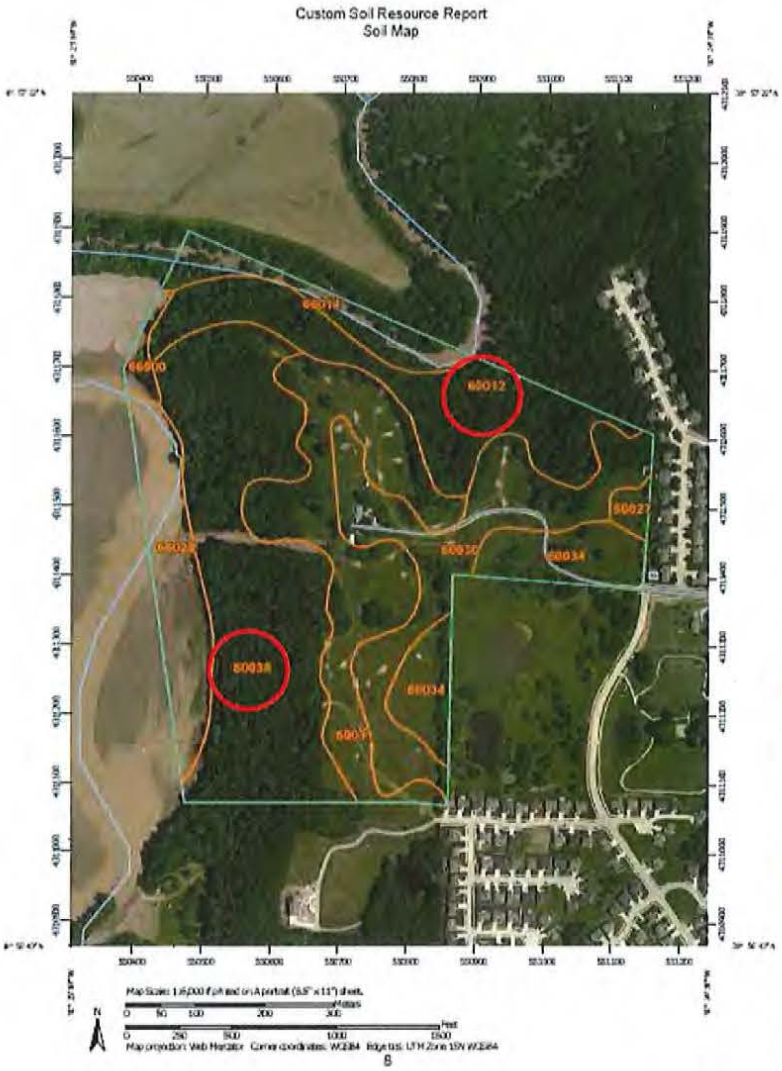
Slightly limited ..... 0.01 to 0.30

Moderately limited ..... 0.31 to 0.60

Limited ..... 0.61 to 0.99

Very limited..... 1.00

The pages following will reference this study in how it relates to this development.

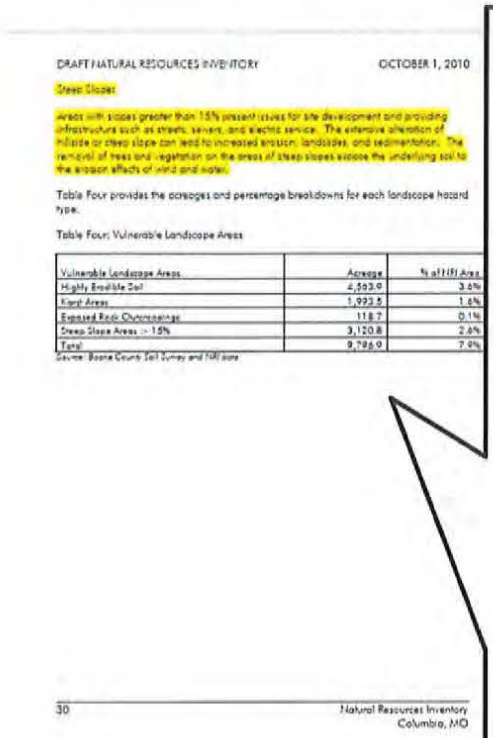


As noted on this map and in the pages below there are approximately 44 acres or nearly half of the proposed development that lie on steep slopes. Nearly all of these slopes makeup the entirety of the existing climax forest. The Soil Resource report is available at the end of this document.

Map Unit Legend

Boone County, Missouri (MO019)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
60012	Bardley-Clinkenbeard complex, 20 to 45 percent slopes, very stony	14.6	14.7%
60027	Weller silt loam, 2 to 5 percent slopes, eroded	0.9	0.9%
60030	Winfield silt loam, 5 to 9 percent slopes	16.0	15.9%
60031	Winfield silt loam, 9 to 14 percent slopes, eroded	18.0	17.9%
60034	Wrengart silty clay loam, karst, 5 to 14 percent slopes, eroded	7.9	7.9%
60038	Rocheport-Bonnefemme complex, 14 to 25 percent slopes	29.0	28.8%
66000	Moniteau silt loam, 0 to 2 percent slopes, occasionally flooded	1.0	1.0%
66014	Haymond silt loam, 0 to 3 percent slopes, frequently flooded	4.7	4.7%
66024	Wilbur silt loam, 0 to 2 percent slopes, frequently flooded	8.3	8.3%
Totals for Area of Interest		100.7	100.0%

The City of Columbia's NRI data and the Boone County Soil Survey provide the City's planners with accurate information needed to make decisions regarding how to best manage the city's natural and economic resources.



DRAFT NATURAL RESOURCES INVENTORY OCTOBER 1, 2010

Steep Slopes

Areas with slopes greater than 15% present issues for site development and providing infrastructure such as streets, sewers, and electric service. The extensive alteration of hillside or steep slope can lead to increased erosion, landslides, and sedimentation. The removal of trees and vegetation on the areas of steep slopes expose the underlying soil to the erosion effects of wind and water.

Table Four provides the acreages and percentage breakdowns for each landscape hazard type.

Table Four: Vulnerable Landscape Areas

Vulnerable Landscape Areas	Acreage	% of NRI Area
Highly Erodible Soil	4,563.9	3.6%
Karst Areas	1,993.5	1.6%
Exposed Rock Outcroppings	118.7	0.1%
Steep Slope Areas > 15%	3,120.8	2.6%
Total	9,796.9	7.9%

Source: Boone County Soil Survey and NRI data

30 Natural Resources Inventory Columbia, MO

DRAFT NATURAL RESOURCES INVENTORY OCTOBER 1, 2010

Steep Slopes

Areas with slopes greater than 15% present issues for site development and providing infrastructure such as streets, sewers, and electric service. The extensive alteration of hillside or steep slope can lead to increased erosion, landslides, and sedimentation. The removal of trees and vegetation on the areas of steep slopes expose the underlying soil to the erosion effects of wind and water.

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Total	9,796.9	7.9%

Source: Boone County Soil Survey and NRI data

5

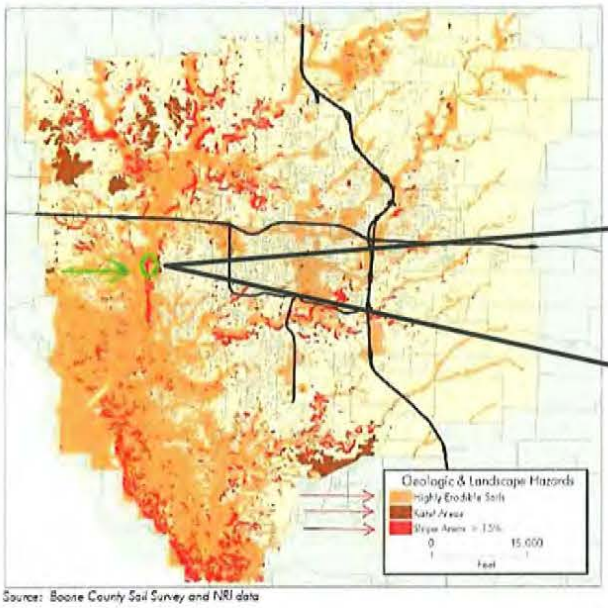
DRAFT NATURAL RESOURCES INVENTORY OCTOBER 1, 2010

4.4 Vulnerable Landscape

The NRI area has several landscape features were human activity, including agriculture and development may present hazards to plants, wildlife, and water quality. These vulnerable areas include karst topography, highly erodible soils, and steep slopes.

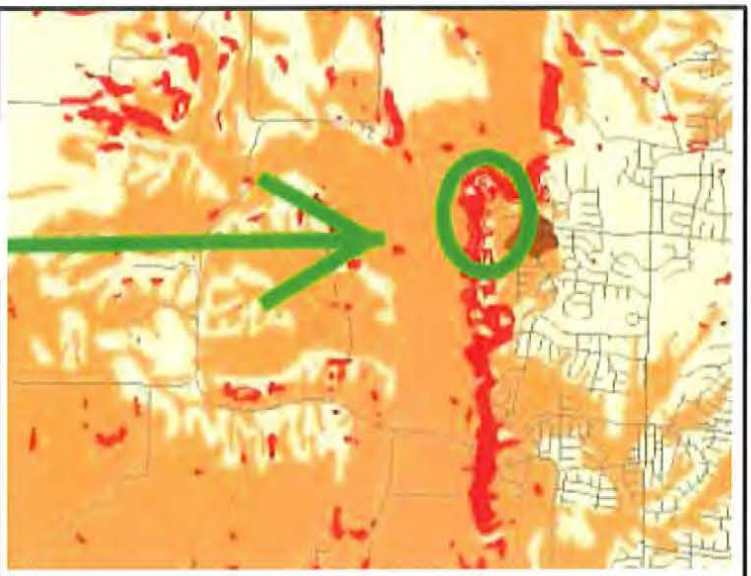
Map Nine: Vulnerable Landscape Areas, shows the location and distribution of the karst, erodible soils, and steep areas in the NRI area.

Map Nine: Vulnerable Landscape Areas



Source: Boone County Soil Survey and NRI data

The NRI notes there are several landscape features that can create environmental hazards. These three vulnerable landscape areas are Karst topography, highly erodible soil, and steep slopes. Nearly **all** of the property in the proposed Breckenridge development is deemed by the City of Columbia to be a Vulnerable Landscape Area.



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The NRI describes slope as such:

Slope, in combination with geologic factors, influences the suitability of land for constructing such facilities as buildings, roads, and utility lines. Foundation stability, construction costs, accessibility, and immediate and long term environmental impacts are also related to slope. Slope influences surface drainage, favoring either percolation into the soil or runoff depending upon the slope percentage and the vegetation and tree cover on the surface. On sloping ground there is a tendency for water to run down the hill rather than percolate into the soil which has impacts on stormwater runoff.

Map Eight: Slopes by Category illustrates that the steepest slopes in the NRI area are associated with the Missouri River, Perche Creek and its secondary tributaries, Hinkson Creek, Grindstone Creek, and Little Bonne Femme Creek. Steep slopes for the purposes of the NRI have been defined as slope areas greater than 15%. Approximately 2.2% of the percentage of the NRI area is covered by steep slopes. The average slope for the NRI area is approximately 5.5% which is considered a gentle slope with 86.5% of the NRI area falling in the 0-10% slope category.

The proposed Breckenridge development lies along and above Perche Creek.

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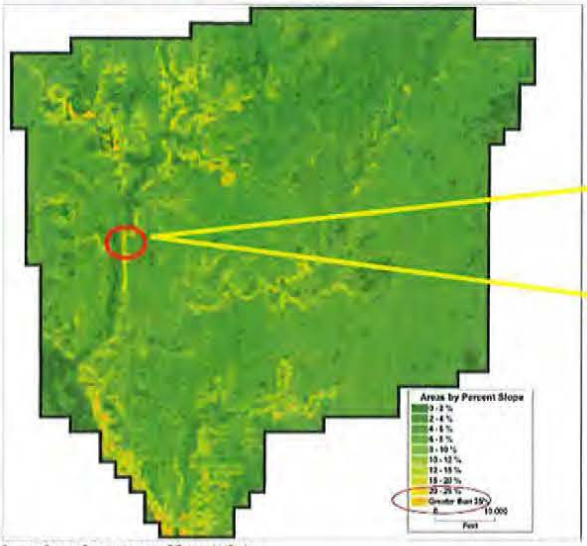
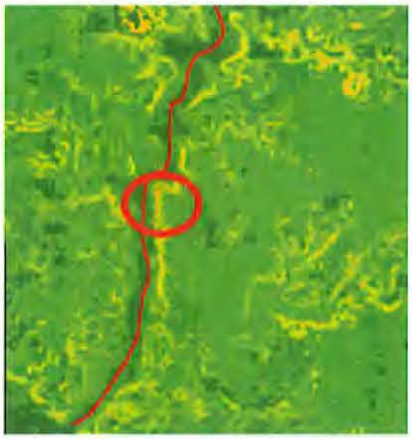
Map Eight: Slopes by Category

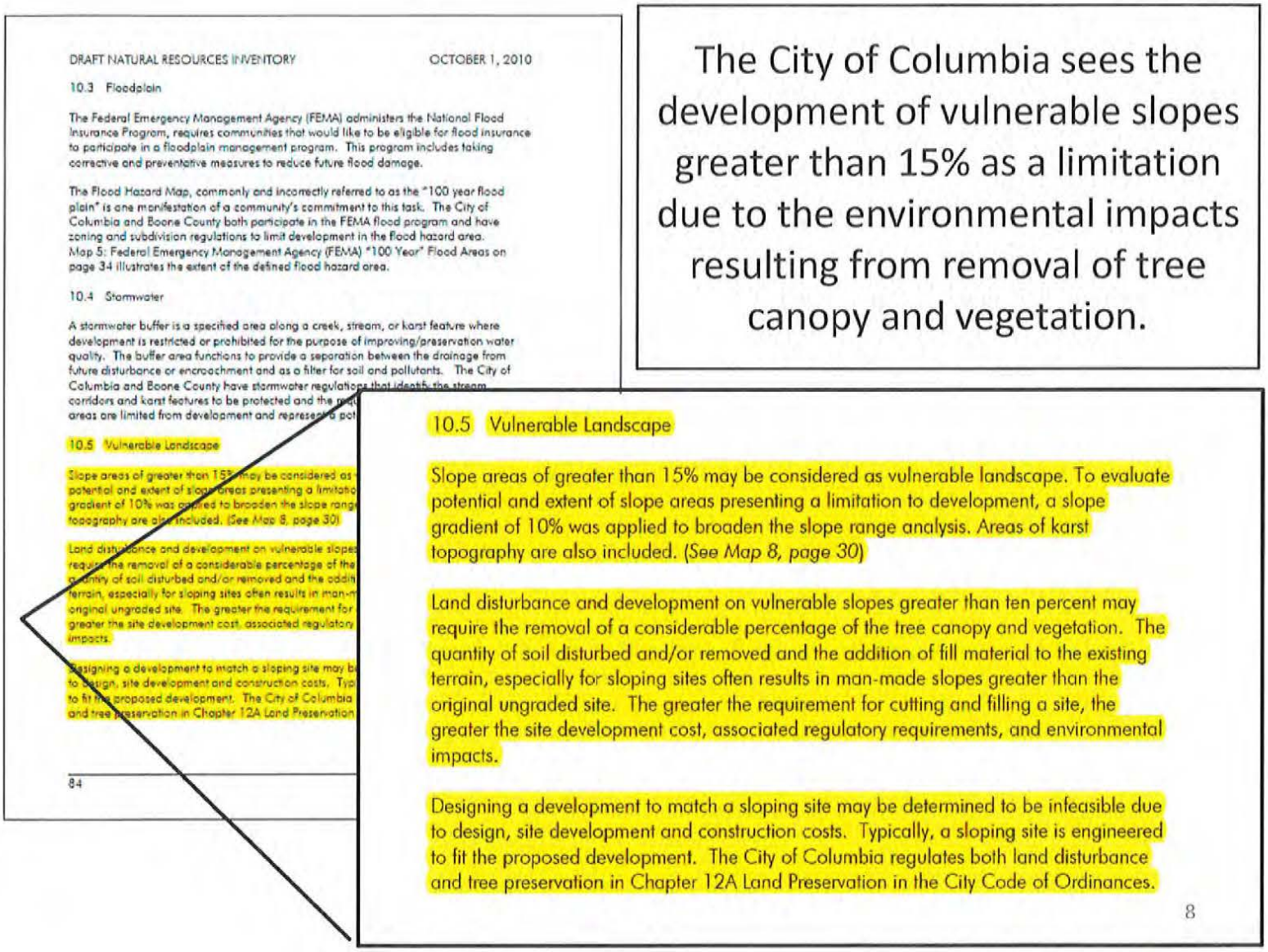


Source: Boone County Assessor DEM and NRI data

As seen below, this property most likely has the highest concentration of slopes greater than 20% than anywhere else along Perche Creek as noted in the NRI.



7



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10.3 Floodplain

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program, requires communities that would like to be eligible for flood insurance to participate in a floodplain management program. This program includes taking corrective and preventative measures to reduce future flood damage.

The Flood Hazard Map, commonly and incorrectly referred to as the "100 year flood plain" is one manifestation of a community's commitment to this task. The City of Columbia and Boone County both participate in the FEMA flood program and have zoning and subdivision regulations to limit development in the flood hazard area. Map 5: Federal Emergency Management Agency (FEMA) "100 Year" Flood Areas on page 34 illustrates the extent of the defined flood hazard area.

10.4 Stormwater

A stormwater buffer is a specified area along a creek, stream, or karst feature where development is restricted or prohibited for the purpose of improving/preservation water quality. The buffer area functions to provide a separation between the drainage from future disturbance or encroachment and as a filter for soil and pollutants. The City of Columbia and Boone County have stormwater regulations that identify the stream corridors and karst features to be protected and the re
areas are limited from development and represent a pot

10.5 Vulnerable Landscape

Slope areas of greater than 15% may be considered as
potential and extent of slope areas presenting a limitatio
gradient of 10% was applied to broaden the slope range
topography are also included. (See Map 8, page 30)

Land disturbance and development on vulnerable slopes
require the removal of a considerable percentage of the
quantity of soil disturbed and/or removed and the additi
terrain, especially for sloping sites often results in man-m
original ungraded site. The greater the requirement for
greater the site development cost, associated regulatory
impacts.

Designing a development to match a sloping site may b
to design, site development and construction costs. Typ
to fit the proposed development. The City of Columbia
and tree preservation in Chapter 12A Land Preservation

84

The City of Columbia sees the development of vulnerable slopes greater than 15% as a limitation due to the environmental impacts resulting from removal of tree canopy and vegetation.

10.5 Vulnerable Landscape

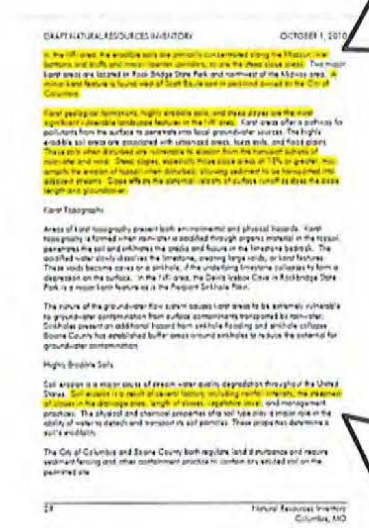
Slope areas of greater than 15% may be considered as vulnerable landscape. To evaluate potential and extent of slope areas presenting a limitation to development, a slope gradient of 10% was applied to broaden the slope range analysis. Areas of karst topography are also included. (See Map 8, page 30)

Land disturbance and development on vulnerable slopes greater than ten percent may require the removal of a considerable percentage of the tree canopy and vegetation. The quantity of soil disturbed and/or removed and the addition of fill material to the existing terrain, especially for sloping sites often results in man-made slopes greater than the original ungraded site. The greater the requirement for cutting and filling a site, the greater the site development cost, associated regulatory requirements, and environmental impacts.

Designing a development to match a sloping site may be determined to be infeasible due to design, site development and construction costs. Typically, a sloping site is engineered to fit the proposed development. The City of Columbia regulates both land disturbance and tree preservation in Chapter 12A Land Preservation in the City Code of Ordinances.

8

The City of Columbia points out that the alteration and disturbance of a steep slope is very likely to increase soil erosion allowing sediments to flow into streams.



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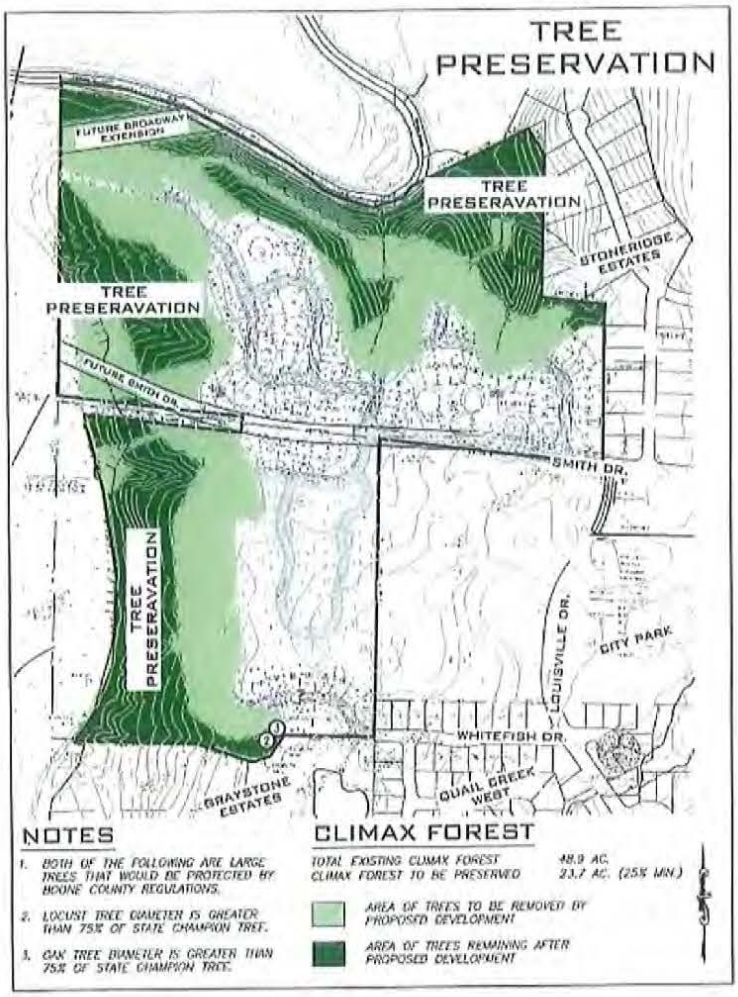
In the NRI area, the erodible soils are primarily concentrated along the Missouri river bottoms and bluffs and major riparian corridors, as are the steep slope areas. Two major karst areas are located in Rock Bridge State Park and northwest of the Midway area. A minor karst feature is found west of Scott Boulevard in parkland owned by the City of Columbia.

Karst geological formations, highly erodible soils, and steep slopes are the most significant vulnerable landscape features in the NRI area. Karst areas offer a pathway for pollutants from the surface to penetrate into local groundwater sources. The highly erodible soil areas are associated with urbanized areas, loess soils, and flood plains. These soils when disturbed are vulnerable to erosion from the transport actions of rainwater and wind. Steep slopes, especially those slope areas of 15% or greater, may amplify the erosion of topsoil when disturbed, allowing sediment to be transported into adjacent streams. Slope effects the potential velocity of surface runoff as does the slope length and groundcover.

Highly Erodible Soils

Soil erosion is a major cause of stream water quality degradation throughout the United States. Soil erosion is a result of several factors, including rainfall intensity, the steepness of slopes in the drainage area, length of slopes, vegetative cover, and management practices. The physical and chemical properties of a soil type play a major role in the ability of water to detach and transport its soil particles. These properties determine a soil's erodibility.

9



This property contains 48.9 acres of climax forest of which 43.6 acres rest on slopes greater than 20%.

Reasonable evaluations of this plan estimate that over 50% of the 43.6 acres of climax forest that lie on a >20% slope will need to be removed in order to facilitate this development. In addition to the removal of the existing vegetation and canopy, the existing topography will have to be seriously modified to accommodate this development.

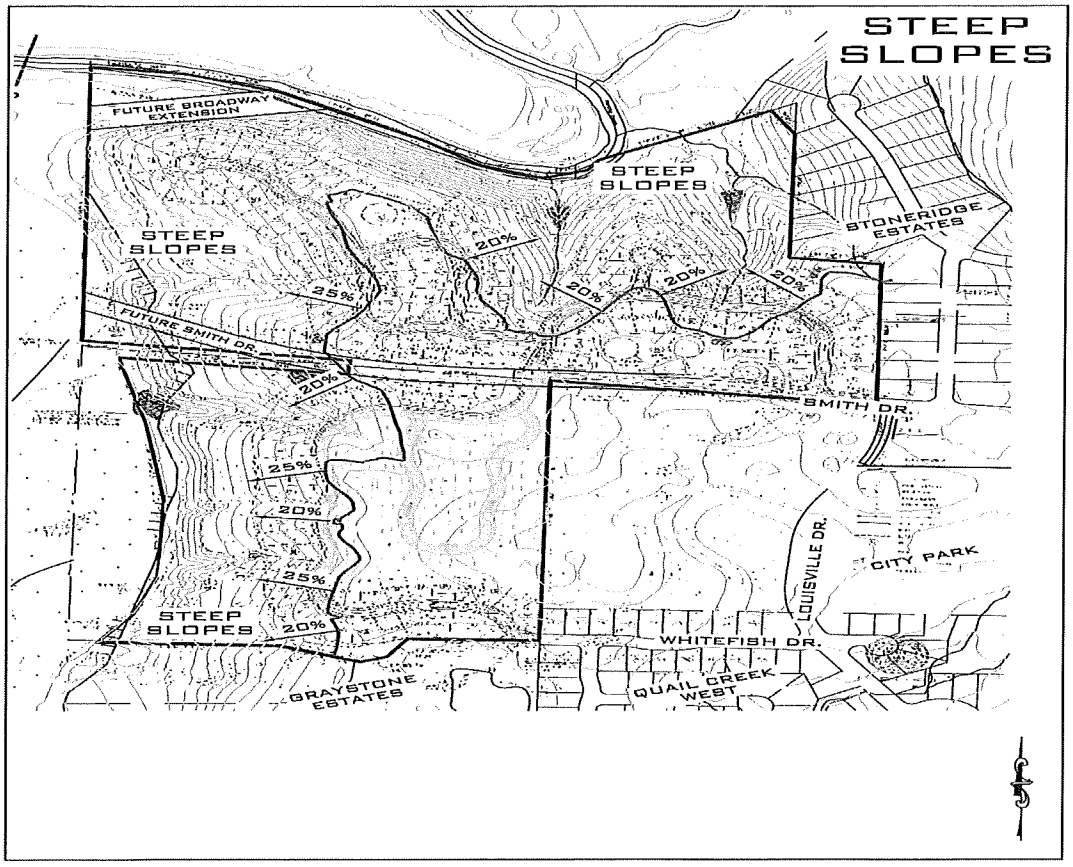
BRECKENRIDGE PARK LAND AREAS	
AREA OF STREAM BUFFER/FLOOD-PLAIN	12.8 AC
AREA OF DEVELOPABLE LAND THAT DRAINS TO SINK HOLE	3.5 AC
AREA OF SINKHOLES AND SINKHOLE BUFFER REQUIRED BY BOONE COUNTY REGULATIONS	20.4 AC
AREA OF STEEP SLOPES (20% OR GREATER)	43.6 AC
REMAINING AREA OF DEVELOPABLE LAND	10.5 AC
AREA OF DEVELOPMENT	90.8 AC

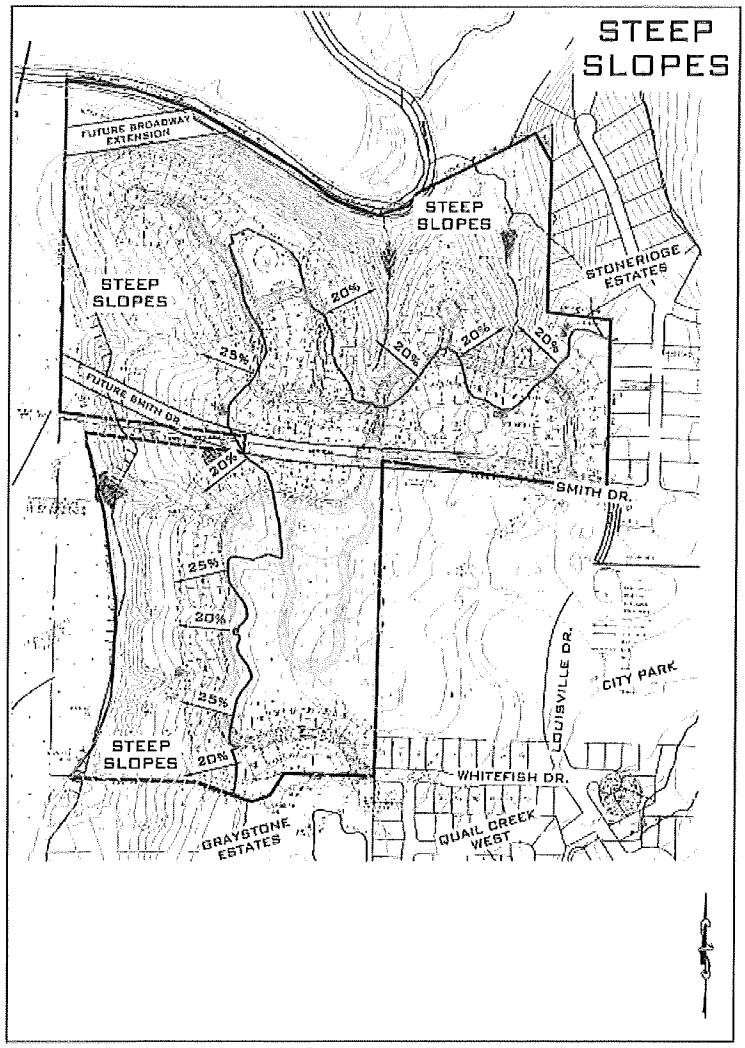
The proposed Breckenridge Development is 90.7 acres.

43.6 acres of the development encompass an area with slopes greater than 20%. The baseline for considering a slope steep is 15%

11

<u>73 of the 168 (43.4 %) of the lots</u> on this development would be would be built on land with a slope greater than 15%.





A majority of the roadways in this development will be built on existing slopes within the 20%-25% range. The result being large, 20 to 25 foot cuts to create level sites for home construction. Large cuts into the sides of steep slopes coupled with the amount of tree clearing that will be necessary to accommodate this will, most likely, lead to excess erosion and damage to the remaining undeveloped portion of the property, which is overall much steeper than even the 20%-25% area and therefore even more susceptible to damage from excess runoff.

A majority of the proposed roadways either will run through these slopes, be constructed over sinkholes or require large cuts into known, documented Karst Topography which does not seem to be a wise decision and greatly increases the chance of the infrastructure becoming a physical and economic liability to the city and it's taxpayers.

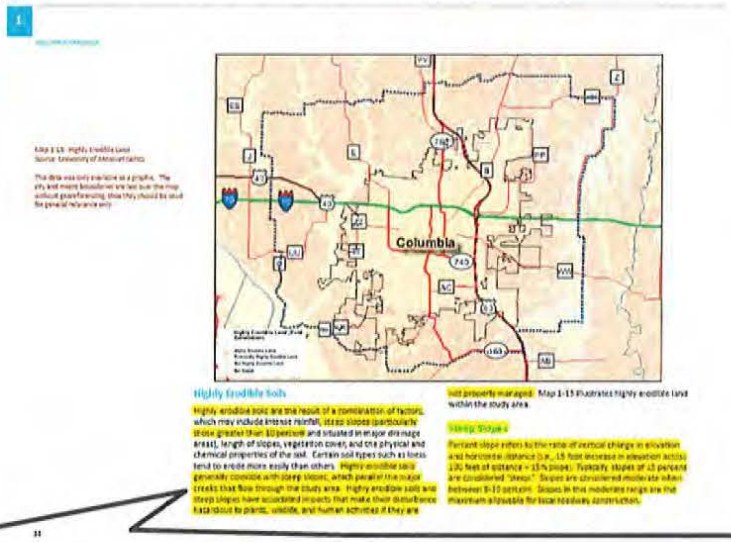
13

As noted in the chart below, a majority of the roads in this development, including the Smith Drive extension, as well as over half of the housing units will be built on soils that have the highest numerical rating in nearly all categories indicating the most severe of limitations.

Table 13.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60012:										
Bardley-------	Very limited:		Very limited:		Very limited:		Very limited:		Very limited:	
	slope	1.00	slope	1.00	slope	1.00	slope	1.00	slope	1.00
	(very limited)		(very limited)		(very limited)		(very limited)		(very limited)	
	shrink-swell	0.45	hard bedrock <40"	1.00	shrink-swell	0.45	low strength	1.00	large stones	0.79
	(moderately limited)		(very limited)		(moderately limited)		(very limited)		(limited)	
	large stones	0.35	shrink-swell	0.45	large stones	0.35	shrink-swell	0.45	depth to bedrock	0.13
	(moderately limited)		(moderately limited)		(moderately limited)		(moderately limited)		(slightly limited)	
Clinkenbeard--	Very limited:		Very limited:		Very limited:		Very limited:		Very limited:	
	slope	1.00	slope	1.00	slope	1.00	low strength	1.00	large stones >30%	1.00
	(very limited)		(very limited)		(very limited)		(very limited)		(very limited)	
	large stones	1.00	hard bedrock <40"	1.00	large stones	1.00	slope	1.00	slope	1.00
	(very limited)		(very limited)		(very limited)		(very limited)		(very limited)	
	shrink-swell	1.00	large stones	1.00	shrink-swell	1.00	large stones	1.00	too clayey	1.00
	(very limited)		(very limited)		(very limited)		(very limited)		(very limited)	
60038:										
Rocheport-----	Very limited:		Very limited:		Very limited:		Very limited:		Very limited:	
	slope	1.00	slope	1.00	slope	1.00	low strength	1.00	slope	1.00
	(very limited)		(very limited)		(very limited)		(very limited)		(very limited)	
	shrink-swell	0.45	shrink-swell	0.96	shrink-swell	0.45	slope	1.00		
	(moderately limited)		(limited)		(moderately limited)		(very limited)			
			wetness	0.90			shrink-swell	0.45		
			(limited)				(moderately limited)			
60038:										
Bonnefemme----	Very limited:		Very limited:		Very limited:		Very limited:		Very limited:	
	shrink-swell	1.00	hard bedrock <40"	1.00	slope	1.00	low strength	1.00	slope	1.00
	(very limited)		(very limited)		(very limited)		(very limited)		(very limited)	
	slope	1.00	shrink-swell	1.00	shrink-swell	1.00	slope	1.00	depth to bedrock	0.42
	(very limited)		(very limited)		(very limited)		(very limited)		(moderately limited)	
	hard bedrock	0.51	slope	1.00	depth to bedrock	0.51	shrink-swell	1.00		
	(moderately limited)		(very limited)		(moderately limited)		(very limited)			
60034:										
Wrengart------	Moderately limited:		Very limited:		Very limited:		Very limited:		Slightly limited:	
	slope	0.60	wetness	1.00	slope	1.00	low strength	1.00	wetness	0.28
	(moderately limited)		(very limited)		(very limited)		(very limited)		(slightly limited)	
	shrink-swell	0.45	slope	0.60	shrink-swell	0.45	shrink-swell	0.45	slope	0.16
	(moderately limited)		(moderately limited)		(moderately limited)		(moderately limited)		(slightly limited)	
	wetness	0.28	shrink-swell	0.45	wetness	0.28	wetness	0.28		
	(slightly limited)		(moderately limited)		(slightly limited)		(slightly limited)			

The City of Columbia, in Columbia Imagined, recognizes that steep slope development is a significant contributor to highly erodible soil conditions and also a limitation to roadway construction. A slope is considered moderate when between 8%-10%. Slopes in this range are the maximum allowable for the construction of roadways.

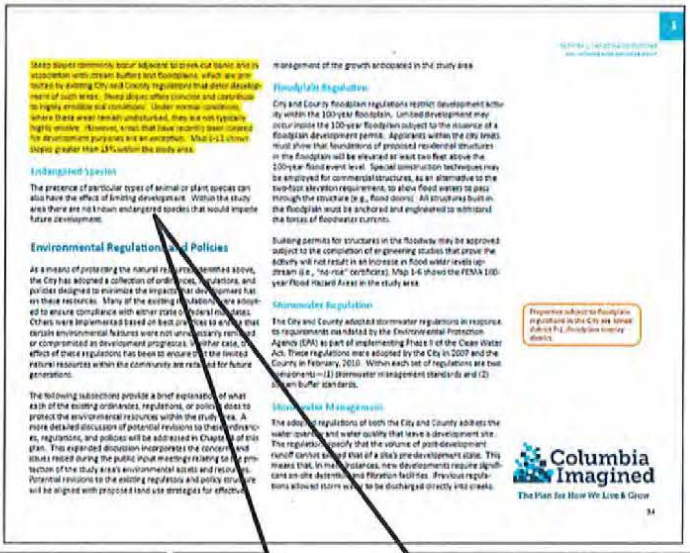


Highly Erodible Soils

Highly erodible soils are the result of a combination of factors, which may include intense rainfall, steep slopes (particularly those greater than 10 percent and situated in major drainage areas), length of slopes, vegetation cover, and the physical and chemical properties of the soil. Certain soil types such as loess tend to erode more easily than others. Highly erodible soils generally coincide with steep slopes, which parallel the major creeks that flow through the study area. Highly erodible soils and steep slopes have associated impacts that make their disturbance hazardous to plants, wildlife, and human activities if they are not properly managed. Map 1-13 illustrates highly erodible land within the study area.

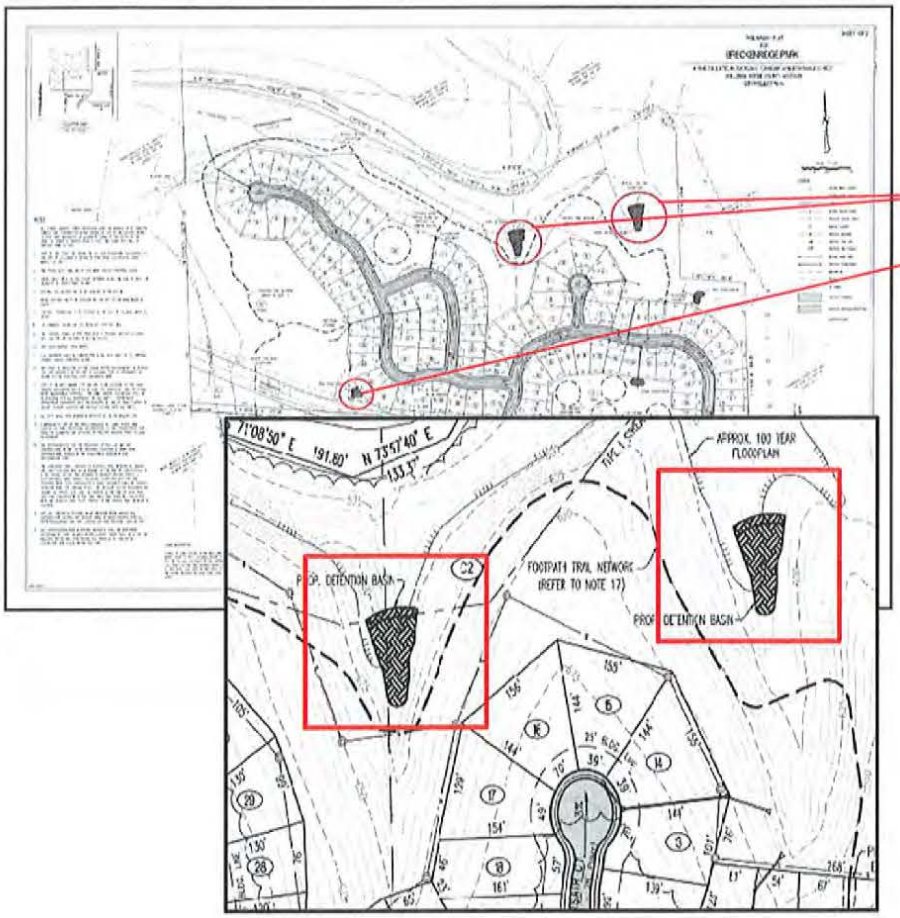
Steep Slopes

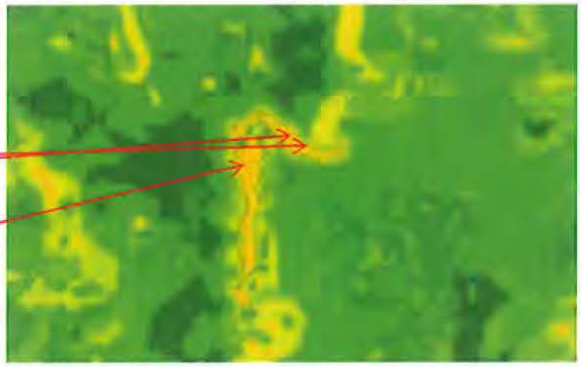
Percent slope refers to the ratio of vertical change in elevation and horizontal distance (i.e., 15 foot increase in elevation across 100 feet of distance = 15% slope). Typically, slopes of 15 percent are considered "steep." Slopes are considered moderate when between 8-10 percent. Slopes in this moderate range are the maximum allowable for local roadway construction.



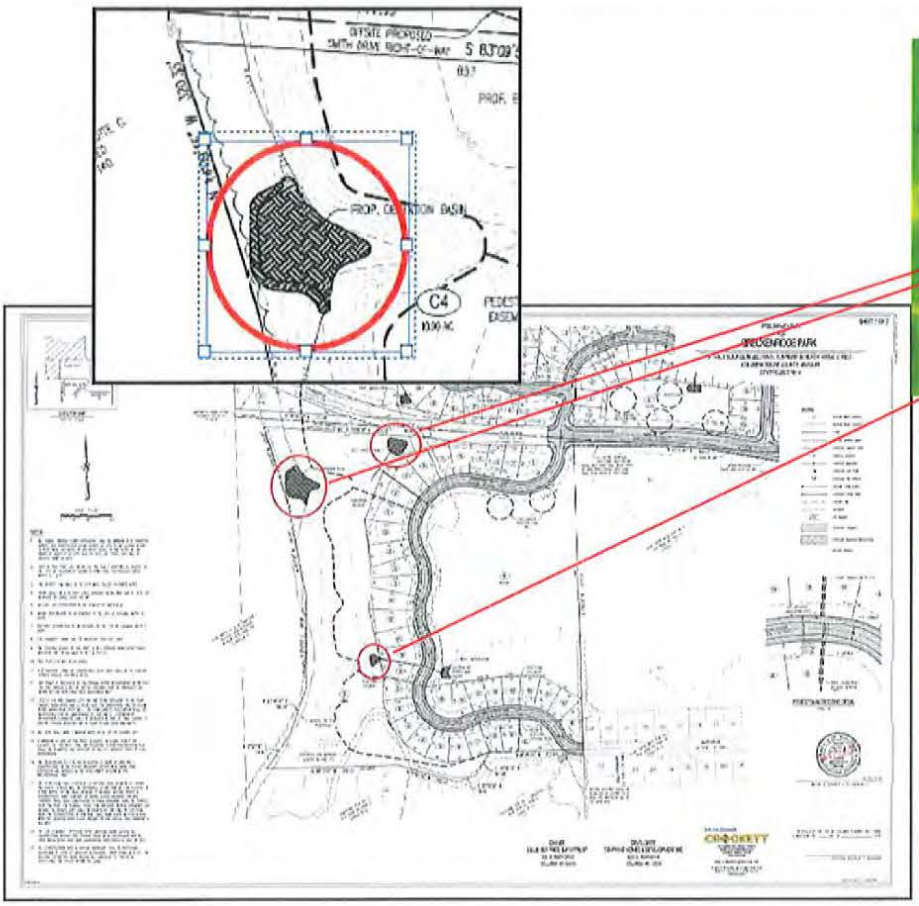
Steep slopes commonly occur adjacent to creek cut banks and in association with stream buffers and floodplains, which are protected by existing City and County regulations that deter development of such areas. Steep slopes often coincide and contribute to highly erodible soil conditions. Under normal conditions, where these areas remain undisturbed, they are not typically highly erosive. However, areas that have recently been cleared for development purposes are an exception. Map 1-12 shows slopes greater than 15% within the study area.

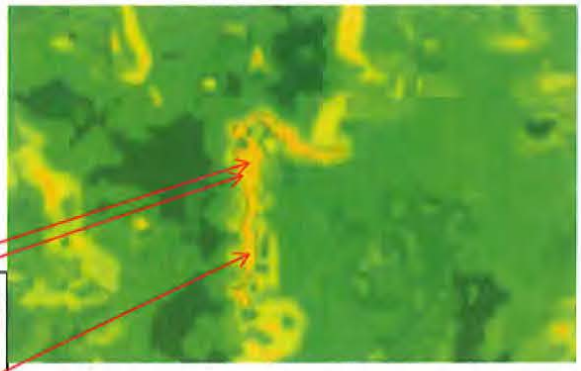
There are 3 Storm water Ponds on the North side of property on 20%-40% slopes. Having much of the proposed development drain into storm water ponds located at the base of extremely steep ravines will greatly increase erosion along these runs. It should also be noted that the 2 storm water ponds on the north side are within the 100 year floodplain.





There are 3 storm water Ponds on the West side of the property on 20%-40% slopes. It should also be noted that the one of storm water ponds on the west side is within the 100 year floodplain.





3

COLUMBIA IMAGINED

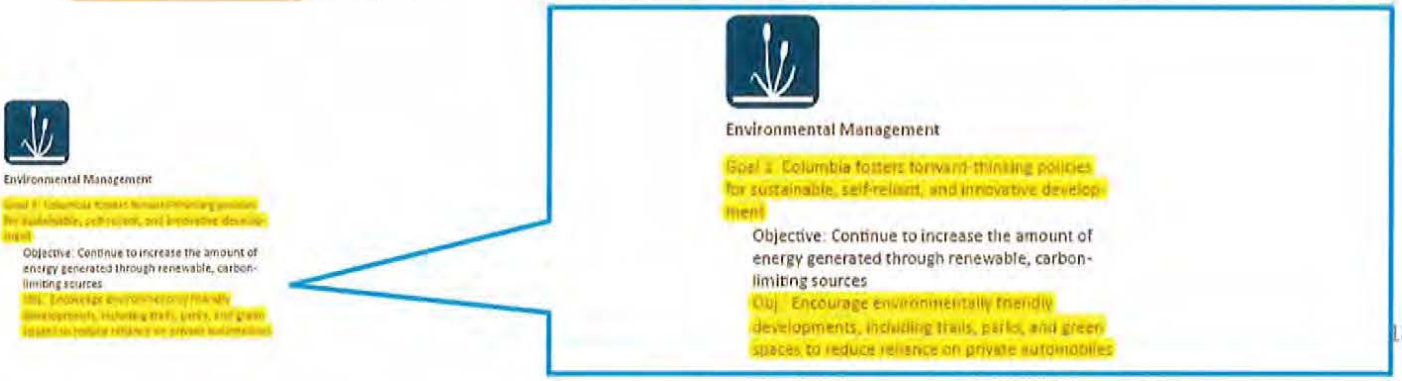
The 35 Goals and Objectives

In the meetings and surveys of Phase IV, citizens were asked to share thoughts on the best way for Columbia to grow and develop in the future. Participation in this phase was robust, with nearly 300 citizens either attending one of the four meetings or submitting a survey. This produced roughly 500 goals and nearly 1,000 objectives regarding how the community should grow and develop.

Responses were carefully considered, matched, and refined, resulting in 35 top goals and objectives, equal to five in each of the seven categories.

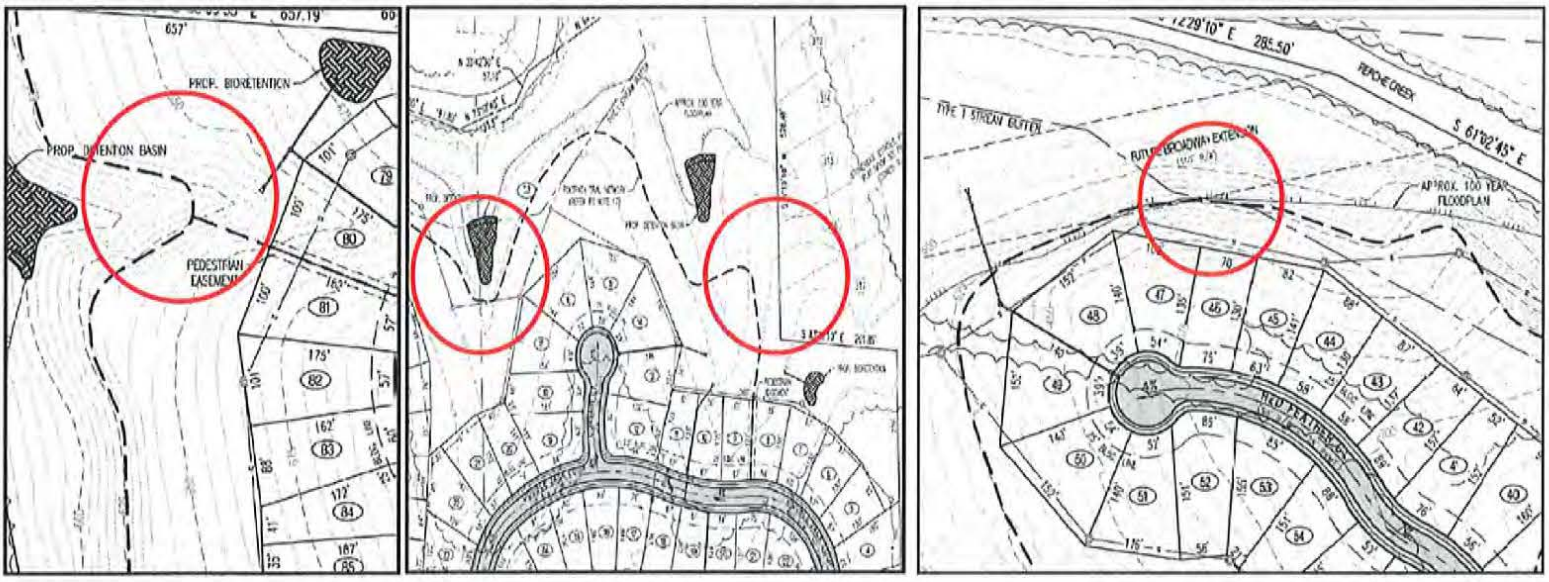
How incorporating trails and green spaces on steep slopes does not correlate with being an environmentally friendly development

While the development does try to meet the objectives of Columbia Imagined by providing trails and open spaces, we do not believe that locating nearly all of these features on known environmentally sensitive areas is how the City of Columbia indented on achieving these goals. As noted on the slide below, nearly all of the trails located in the open space that is allotted by the developer rest on slopes greater than 25%. On many locations, the trail traverses through ravines and ridges with much steeper inclines. As noted at a meeting between the developers and concerned neighbors, the homeowners association of the proposed development would be responsible for the maintenance costs of the trail, which according to the plan, grants access to the general public. We do not feel that it is practical or affordable for an association to bear the additional costs required to maintain a public access trail which is subject to excess erosion because of its placement on such extreme slopes. Additionally, due to these extremities, access to the trails would be, at best, impractical, likely discouraging most of the general public from using it. While this is open space in the technical sense, the design of the rest of the development and the intended uses for the open space will likely cause much more harm to the open spaces than is desired.



18

Map showing 4 random locations of proposed trail on steep slopes on the property.



Tables showing severe limitations, either because of erodibility or steepness, for building trails on steep slopes that contain the following noted soils as shown in the Boone County Soil Study .

Table 11.--Recreational Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60012:								
Bardley	Very limited: slope (very limited) large surface stones (limited) large stones (slightly limited)	1.00 0.79 0.03	Very limited: slope (very limited) large surface stones (limited) large stones (slightly limited)	1.00 0.79 0.03	Very limited: slope (very limited) large stones (limited) depth to bedrock (slightly limited)	1.00 0.99 0.13	Very limited: slope (very limited) large surface stones (limited) large stones (slightly limited)	1.00 0.79 0.03
Clinkenbeard	Very limited: slope (very limited) too clayey (very limited) large surface stones (limited)	1.00 1.00 0.79	Very limited: slope (very limited) too clayey (very limited) large surface stones (limited)	1.00 1.00 0.79	Very limited: large stones >25% (very limited) slope (very limited) too clayey (very limited)	1.00 1.00 1.00	Very limited: slope (very limited) too clayey (very limited) large surface stones (limited)	1.00 1.00 0.79
60038:								
Rocheport	Very limited: slope (very limited) percs slowly (slightly limited)	1.00 0.13	Very limited: slope (very limited) percs slowly (slightly limited)	1.00 0.13	Very limited: slope (very limited) percs slowly (slightly limited)	1.00 0.13	Very limited: erodes easily (very limited) slope (slightly limited)	1.00 0.25
Bonnefemme	Very limited: slope (very limited) percs slowly (slightly limited)	1.00 0.17	Very limited: slope (very limited) percs slowly (slightly limited)	1.00 0.17	Very limited: slope (very limited) depth to bedrock (moderately limited) percs slowly (slightly limited)	1.00 0.42 0.17	Very limited: erodes easily (very limited) slope (limited)	1.00 0.67

The City of Columbia , in Columbia Imagined, specifically points out four physical limitations to development that result from unique environmental features. These four are: Steep slopes, karst topography, sinkholes and soil conditions. Once again, a significant portion the proposed Breckenridge development contains all 4 of these features. The City also notes that these limitations should influence how future land use patterns can or should be established and the importance of these limitations in ensuring that there is very limited degradation of these 4 unique environmental features for future generations of Columbians.

Environmental Limitations to Development

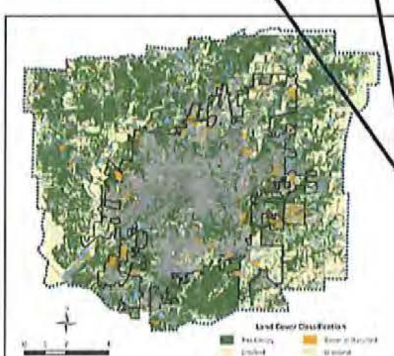
The NRI report is a significant resource for understanding existing conditions in and around Columbia. While previous illustrations have focused primarily on how land has been consumed, the NRI offers other valuable data and insights. The following sections explore what development limitations exist in the study area. These limitations influence how future land use patterns can or should be established.

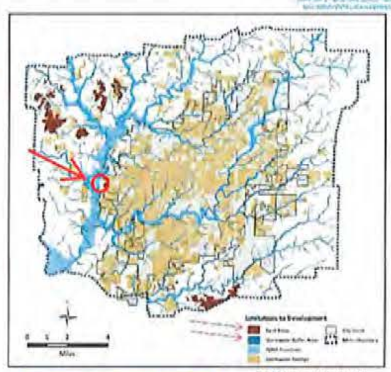
Development limitations resulting from unique environmental resources within the study area can be summarized in three general categories:

1. Physical: Steep slopes, karst topology, sinkholes, soil conditions
2. Regulatory: Zoning and subdivision, floodplain, stormwater, land disturbance, tree preservation

Development Constraint Acreage by Type	Acreage	% by Type	% of NRI Area
No City of Columbia Sewer Service	20,260.3	42.5%	16.0%
100 Year Floodplain	14,737.0	30.9%	11.6%
Landscape: Slope greater than 10 percent	11,309.8	23.7%	8.9%
Stormwater Buffer	1,419.7	3.0%	1.1%

Table 1-3: Limitations to Development by Type and Acreage
Source: City of Columbia Public Works and NRI data





Columbia Imagined
The Plan for How We Live & Grow

21

The visions and principles of Columbia Imagined regarding land use include the preservation of the natural environment, **value the natural topography** and the **preservation of unique environmentally sensitive areas**. The NRI, again, notes that nearly the entirety of this property is considered sensitive and nearly all of physical features that encompass this property make up only a very small percentage of total land assets in the NRI, making it truly unique by the City's own standards.

The proposed Breckenridge development, as it stands, falls short in it's efforts to preserve these unique features and in respecting the natural topography of the property. The developer has tried to demonstrate that he is doing so by clustering homes and increasing the density of the development as suggested in document below which states "This is achieved by clustering homes on smaller individual lots and preserving substantially more open space." The notion that the proposed development is accomplishing the goals stated below is not accurate. The purpose of the proposed density is to have more sellable lots, not to "maintain rural character by the incorporation of large preservation areas for sensitive corridors, prime agricultural land, scenic views, significant archaeological and historic sites, and open spaces". The sensitive and unique features of this property are not compatible with this type of development.

This is just one of the many reasons that HOA's of the three neighborhoods surrounding the proposed Breckenridge development are **opposed** to the annexation of this property which is outside the Columbia City Limits and Urban Service Area and fails to follow the spirit and many of the guiding principals of Columbia Imagined.

4

Land Use Principles and Policies – Environmental Management

Setting aside green space for environmental services, recreation, and nonmotorized transportation is a familiar and widely accepted necessity among Columbia's citizens and land developers. Funding for public parks and greenbelt trail connections continues to benefit from strong community support and funding, and is the community asset that citizens value most according to recent surveys (Phase III input; 2010 Community Survey). As the city continues to grow, it is vital to continue building on the existing network of greenways and parks to ensure that the quality of life enjoyed and expected by residents is not only sustained but improved.

Policy One: Adopt Alternative Development Regulations

Existing development and zoning regulations often create barriers to allowing more environmentally sound options in the development of land. To truly embrace the desires of maintaining the quality of life and small-town feeling of Columbia while at the same time accommodating projected housing and population needs, alternatives to the traditional standards of development should be investigated.

The Principles of Environmental Management

Columbia is a model for affordable and practical environmental sustainability. Natural resource preservation within the built environment is supported, including maintaining open space, natural landscape, sensitive features, and watersheds in good condition.

Two possible revisions to the City's subdivision and zoning regulations could fulfill this need. The first option is to create a green space conservation zoning district, which places green space preservation on equal footing with other land uses. The second is to establish conservation subdivision regulations, which place additional emphasis on the identification and protection of valuable natural features on land slated for development.

Conservation subdivision standards are designed to maintain rural character by incorporating large preservation areas for sensitive environmental corridors, prime agricultural land, scenic views, significant archaeological and historic sites, and open spaces. This is achieved by clustering homes on smaller individual lots and preserving substantially more usable open space than would be provided by conventional subdivision design. The resulting common areas may serve the same function as public neighborhood parks without the need for dedication of additional land area by the developer. The compact nature of clustered conservation subdivisions typically results in lower development and maintenance costs associated with infrastructure, since roads and utilities tend to be more concentrated. Figure 4-8 shows the development of a property under conventional and conservation subdivision practices.

Policy Two: Prepare a "Green Infrastructure" Plan

Green infrastructure refers to the concept of providing connected natural ecosystems as part of the framework for both conserva-

Figure 4-8: Conventional vs. Conservation Subdivisions

121

22

survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; evaluate sites for agricultural waste management; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 13 shows the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Moderately limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Limited* indicates that the soil has one or more features that are significant limitations for the specified use. The limitations can be overcome, but overcoming them generally requires special design, soil reclamation, or installation procedures that may result in additional expense. Fair performance and moderate or high maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The numerical ratings are shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

Not limited	0.00
Slightly limited	0.01 to 0.30
Moderately limited	0.31 to 0.60
Limited	0.61 to 0.99
Very limited	1.00

The numerical ratings used to express the severity of individual limitations indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation.

Limitation class terms and numerical ratings are shown for each limiting soil feature listed. As many as three soil features may be listed for each component. The overall limitation rating for the component is based on the most severe limitation.

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation

Reference for building site limitations

maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The numerical ratings are shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

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Reference for building site limitations cont.

and construction costs. The properties that affect the load-supporting capacity include a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, a water table, and ponding.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction, a water table, ponding, depth to bedrock or a cemented pan, the available water capacity in the upper 40 inches, the content of salts, sodium, or calcium carbonate, and sulfidic materials. The properties that affect trafficability are flooding, a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

The soils of the survey area are rated in table 14 according to limitations that affect their suitability for sanitary facilities. Soils are rated for septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect sanitary facilities. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Moderately limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Limited* indicates that the soil has one or more features that are significant limitations for the specified use. The limitations can be overcome, but overcoming them generally requires special design, soil reclamation, or installation procedures that may result in additional expense. Fair performance and moderate or high maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The numerical ratings are shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

Not limited	0.00
Slightly limited	0.01 to 0.30
Moderately limited	0.31 to 0.60
Limited	0.61 to 0.99
Very limited	1.00

The numerical ratings used to express the severity of individual limitations indicate gradations between

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, a water table, and ponding.

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Boone County, Missouri

March 17, 2016

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/ nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http // offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units).
Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil- landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller numberof measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

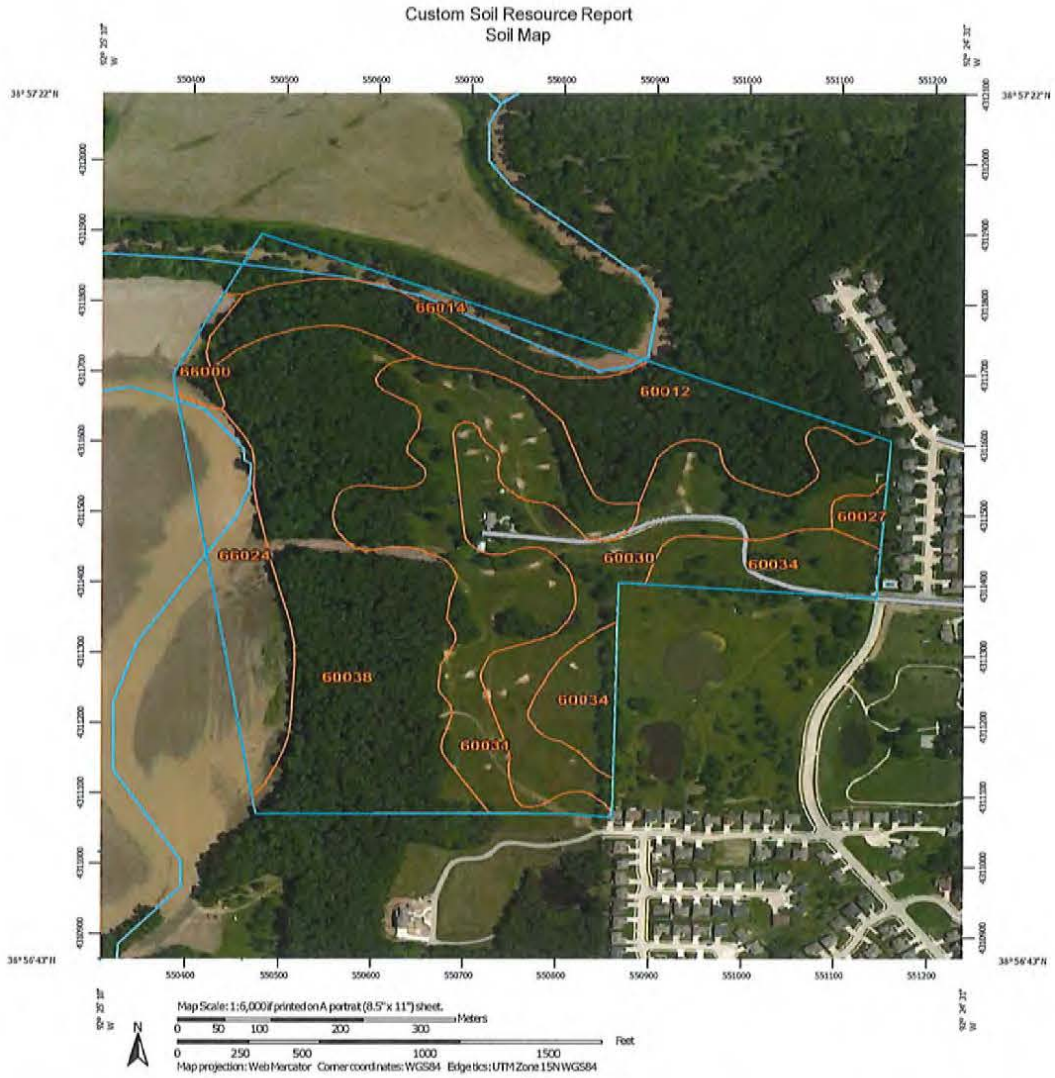
While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


Custom Soil Resource Report
Soil Map
66014
66000
60012
60027
66024
60030
60034
60038
60034
60031
Map Scale: 1:6,000 if printed on A portrait (8.5" x 11") sheet.
Meters
Feet
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

3
2

32

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Boone County, Missouri Survey Area Data: Version 19, Sep 10, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 8, 2015—Jun 9, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Boone County, Missouri (MO019)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
60012	Bardley-Cinkenbeard complex, 20 to 45 percent slopes, very stony	14.6	14.7%
60027	Weller silt loam, 2 to 5 percent slopes, eroded	0.9	0.9%
60030	Winfield silt loam, 5 to 9 percent slopes	16.0	15.9%
60031	Winfield silt loam, 9 to 14 percent slopes, eroded	18.0	17.9%
60034	Wrengart silty clay loam, karst, 5 to 14 percent slopes, eroded	7.9	7.9%
60036	Rocheport-Bonnefemme complex, 14 to 25 percent slopes	29.0	28.8%
66000	Menteau silt loam, 0 to 2 percent slopes, occasionally flooded	1.0	1.0%
66014	Haymond silt loam, 0 to 3 percent slopes, frequently flooded	4.7	4.7%
66024	Wilbur silt loam, 0 to 2 percent slopes, frequently flooded	8.3	8.3%
Totals for Area of Interest		100.7	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a

particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha- Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Boone County, Missouri

60012—Bardley-Clinkenbeard complex, 20 to 45 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2qp0k
Elevation: 900 to 1,200 feet
Mean annual precipitation: 37 to 47 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 184 to 228 days
Farmland classification: Not prime farmland

Map Unit Composition

Bardley and similar soils: 65 percent
Clinkenbeard and similar soils: 23 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bardley Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope *Landform position (three-dimensional):* Side slope *Down-slope shape:* Convex
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from cherty limestone

Typical profile

A - 0 to 3 inches: cobbly silt loam *E - 3 to 9 inches:* gravelly silt loam *2Bt - 9 to 36 inches:* cobbly clay *2R - 36 to 80 inches:* bedrock

Properties and qualities

Slope: 20 to 45 percent
Percent of area covered with surface fragments: 2.0 percent *Depth to restrictive feature:* 20 to 40 inches to lithic bedrock *Natural drainage class:* Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified *Land capability classification (nonirrigated):* 7e *Hydrologic Soil Group:* D
Ecological site: Chert Limestone/Dolomite Protected Backslope Forest (F115BY014MO), Chert Limestone/Dolomite Exposed Backslope Woodland (F115BY046MO)

Other vegetative classification: Trees/Timber (Woody Vegetation)

Description of Clinkenbeard Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope *Landform position (three-dimensional):* Side slope *Down-slope shape:* Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from limestone

Typical profile

A - 0 to 3 inches: very cobbly silty clay *AB - 3 to 8 inches:* very flaggy silty clay *Bt - 8 to 25 inches:* very flaggy silty clay *R - 25 to 80 inches:* bedrock

Properties and qualities

Slope: 20 to 45 percent
Percent of area covered with surface fragments: 2.0 percent *Depth to restrictive feature:* 20 to 40 inches to lithic bedrock *Natural drainage class:* Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified *Land capability classification (nonirrigated):* 7e *Hydrologic Soil Group:* C
Ecological site: Calcareous Limestone Protected Backslope Forest (F115BY036MO), Calcareous Limestone Exposed Backslope Woodland (F115BY050MO)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)

60027—Weller silt loam, 2 to 5 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2qp0w
Elevation: 700 to 1,350 feet
Mean annual precipitation: 37 to 47 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 184 to 228 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Weller and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Weller Setting

Landform: Interfluves
Landform position (two-dimensional): Summit *Landform position (three-dimensional):* Interfluve *Down-slope shape:* Convex
Across-slope shape: Linear
Parent material: Loess

Typical profile

Ap - 0 to 8 inches: silt loam *BE - 8 to 13 inches:* silt loam *Bt - 13 to 25 inches:* silty clay
Btg - 25 to 60 inches: silty clay loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches *Natural drainage class:* Moderately well drained *Runoff class:* High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified *Land capability classification (nonirrigated):* 2e *Hydrologic Soil Group:* D
Ecological site: Deep Loess Upland Woodland (F115BY001MO)
Other vegetative classification: Trees/Timber (Woody Vegetation)

60030—Winfield silt loam, 5 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2qp0y
Mean annual precipitation: 37 to 47 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 184 to 228 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Winfield and similar soils: 90 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Winfield Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder *Landform position (three-dimensional):* Side slope *Down-slope shape:* Convex
Across-slope shape: Convex
Parent material: Loess

Typical profile

Ap - 0 to 6 inches: silt loam
E - 6 to 14 inches: silt loam
Bt - 14 to 30 inches: silty clay loam *Btg - 30 to 54 inches:* silty clay loam *Cg - 54 to 72 inches:* silt loam

Properties and qualities

Slope: 5 to 9 percent
Depth to restrictive feature: More than 80 inches *Natural drainage class:* Moderately well drained *Runoff class:* High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 11.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified *Land capability classification (nonirrigated):* 3e *Hydrologic Soil Group:* C
Ecological site: Deep Loess Upland Woodland (F115BY001MO)
Other vegetative classification: Trees/Timber (Woody Vegetation)

60031—Winfield silt loam, 9 to 14 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2tbqx
Elevation: 400 to 900 feet
Mean annual precipitation: 37 to 49 inches
Mean annual air temperature: 52 to 59 degrees F
Frost-free period: 184 to 228 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Winfield and similar soils: 90 percent
Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Winfield Setting

Landform: Ridges, hillslopes
Landform position (two-dimensional): Summit, backslope *Landform position (three-dimensional):* Crest, side slope *Down-slope shape:* Convex
Across-slope shape: Convex
Parent material: Loess

Typical profile

Ap - 0 to 6 inches: silt loam
BE - 6 to 10 inches: silt loam
Bt - 10 to 40 inches: silty clay loam
Btg - 40 to 79 inches: silt loam

Properties and qualities

Slope: 9 to 14 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified *Land capability classification (nonirrigated):* 6e *Hydrologic Soil Group:* C
Ecological site: Deep Loess Protected Backslope Forest (F115BY003MO), Deep Loess Exposed Backslope Woodland (F115BY043MO)

Minor Components Goss

Percent of map unit: 10 percent
Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: Chert Upland Woodland (F116AY011MO)
Other vegetative classification: Trees/Timber (Woody Vegetation)

60034—Wrengart silty clay loam, karst, 5 to 14 percent slopes, eroded

Map Unit Setting

National map unit symbol: 669k
Elevation: 350 to 800 feet
Mean annual precipitation: 37 to 47 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 184 to 228 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Wrengart, karst, and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wrengart, Karst Setting

Landform: Sinkholes, hillslopes
Landform position (two-dimensional): Backslope *Landform position (three-dimensional):* Side slope *Down-slope shape:* Linear, convex
Across-slope shape: Linear, convex
Parent material: Loess over pedisediment over residuum weathered from cherty limestone

Typical profile

Ap - 0 to 7 inches: silty clay loam *Bt - 7 to 24 inches:* silty clay loam *2Btx - 24 to 60 inches:* silt loam *3Bt - 60 to 80 inches:* gravelly clay

Properties and qualities

Slope: 5 to 14 percent
Depth to restrictive feature: 20 to 40 inches to undefined
Natural drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified *Land capability classification (nonirrigated):* 4e *Hydrologic Soil Group:* D
Ecological site: Loamy Upland Woodland (F115BY005MO)
Other vegetative classification: Trees/Timber (Woody Vegetation)

60038—Rocheport-Bonnefemme complex, 14 to 25 percent slopes

Map Unit Setting

National map unit symbol: 66dy
Mean annual precipitation: 37 to 47 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 184 to 228 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Rocheport and similar soils: 50 percent
Bonnefemme and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rocheport Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope *Landform position (three-dimensional):* Side slope *Down-slope shape:* Convex
Across-slope shape: Convex
Parent material: Loess over residuum weathered from limestone

Typical profile

A - 0 to 1 inches: silt loam
E - 1 to 5 inches: silt loam
Bt1 - 5 to 30 inches: silty clay loam
2Bt2 - 30 to 48 inches: clay *2Cr - 48 to 52 inches:* bedrock *2R - 52 to 80 inches:* bedrock

Properties and qualities

Slope: 14 to 25 percent
Depth to restrictive feature: 30 to 55 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Natural drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 30 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified *Land capability classification (nonirrigated):* 6e *Hydrologic Soil Group:* C

Ecological site: Loamy Protected Backslope Forest (F115BY006MO), Loamy Exposed Backslope Woodland (F115BY044MO)
Other vegetative classification: Trees/Timber (Woody Vegetation)

Description of Bonnefemme Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope *Landform position (three-dimensional):* Side slope *Down-slope shape:* Convex
Across-slope shape: Convex
Parent material: Loess over residuum weathered from limestone

Typical profile

A - 0 to 1 inches: silt loam
E - 1 to 10 inches: silt loam
Bt1 - 10 to 17 inches: silty clay loam
2Bt2 - 17 to 28 inches: silty clay
2R - 28 to 80 inches: bedrock

Properties and qualities

Slope: 14 to 25 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified *Land capability classification (nonirrigated):* 6e *Hydrologic Soil Group:* C
Ecological site: Loamy Limestone/Dolomite Protected Backslope Forest (F115BY008MO), Loamy Limestone/Dolomite Exposed Backslope Woodland (F115BY045MO)
Other vegetative classification: Trees/Timber (Woody Vegetation)

66000—Moniteau silt loam, 0 to 2 percent slopes, occasionally flooded

Map Unit Setting

National map unit symbol: 2qp82
Elevation: 700 to 900 feet
Mean annual precipitation: 37 to 47 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 184 to 228 days

Farmland classification: Prime farmland if drained

Map Unit Composition
Moniteau and similar soils: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Moniteau Setting
Landform: Flood-plain steps *Down-slope shape:* Concave *Across-slope shape:* Concave *Parent material:* Alluvium

Typical profile
Ap - 0 to 8 inches: silt loam
E - 8 to 17 inches: silt loam
Btg1 - 17 to 32 inches: silty clay loam
Btg2 - 32 to 65 inches: silt loam

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 0 to 12 inches *Frequency of flooding:* Occasional *Frequency of ponding:* None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 11.4 inches)

Interpretive groups
Land capability classification (irrigated): None specified *Land capability classification (nonirrigated):* 3w *Hydrologic Soil Group:* C/D
Ecological site: Wet Terrace Forest (F115BY025MO)
Other vegetative classification: Trees/Timber (Woody Vegetation)

66014—Haymond silt loam, 0 to 3 percent slopes, frequently flooded

Map Unit Setting
National map unit symbol: 2qp8f
Elevation: 340 to 800 feet
Mean annual precipitation: 37 to 47 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 184 to 228 days
Farmland classification: Not prime farmland

Map Unit Composition
Haymond and similar soils: 90 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Haymond Setting

Landform: Flood plains *Down-slope shape:* Linear *Across-slope shape:* Linear *Parent material:* Alluvium

Typical profile

A - 0 to 7 inches: silt loam *Bw - 7 to 22 inches:* silt loam *C - 22 to 80 inches:* silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches *Frequency of flooding:* Frequent *Frequency of ponding:* None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 11.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified *Land capability classification (nonirrigated):* 3w *Hydrologic Soil Group:* B
Ecological site: Loamy Floodplain Forest (F115BY031MO)
Other vegetative classification: Trees/Timber (Woody Vegetation)

66024—Wilbur silt loam, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2qp8p
Elevation: 340 to 950 feet
Mean annual precipitation: 37 to 47 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 184 to 228 days
Farmland classification: Not prime farmland

Map Unit Composition

Wilbur and similar soils: 80 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wilbur Setting

Landform: Flood plains *Down-slope shape:* Linear *Across-slope shape:* Linear *Parent material:* Alluvium

Typical profile

A - 0 to 8 inches: silt loam
Bw - 8 to 36 inches: silt loam
Cg - 36 to 66 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches *Natural drainage class:* Moderately well drained *Runoff class:* Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 11.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified *Land capability classification (nonirrigated):* 3w *Hydrologic Soil Group:* B/D
Ecological site: Loamy Floodplain Forest (F115BY031MO)
Other vegetative classification: Trees/Timber (Woody Vegetation)

Minor Components Moniteau

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Trees/Timber (Woody Vegetation)

Wilbur

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Trees/Timber (Woody Vegetation)

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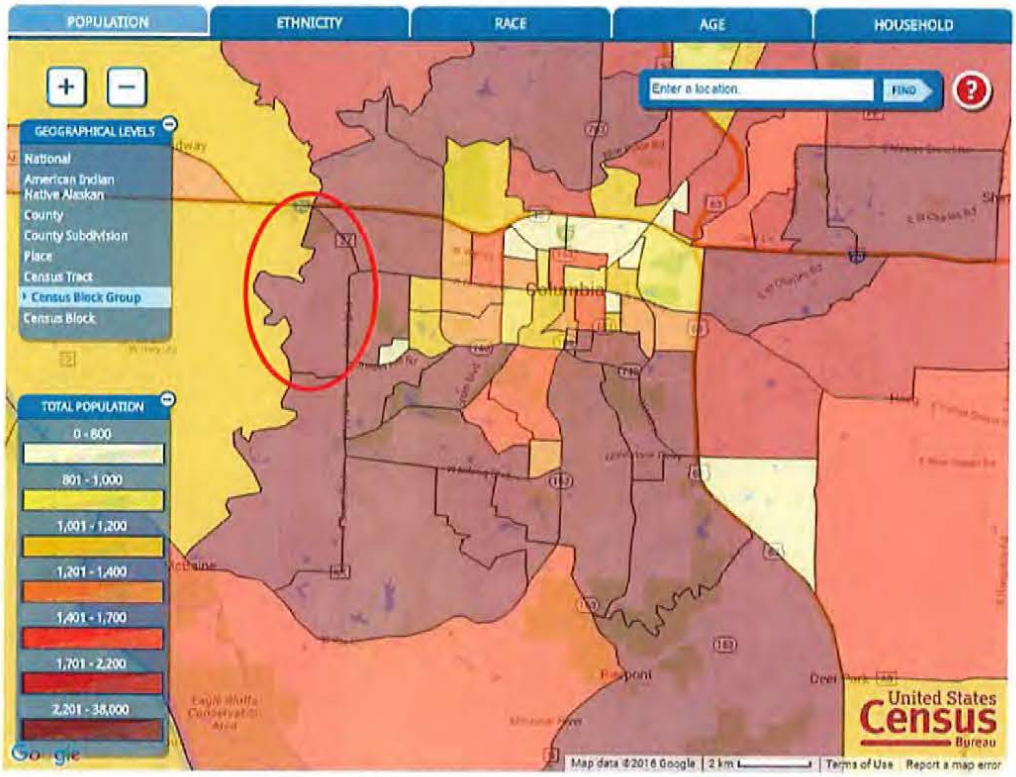
Information Regarding the Proposed Breckenridge Development and its Potential Effects on School OverCrowding Within the Paxton Keeley School Boundaries In Relationship To the Current Availability of Vacant Properties Within The Urban Service Area.

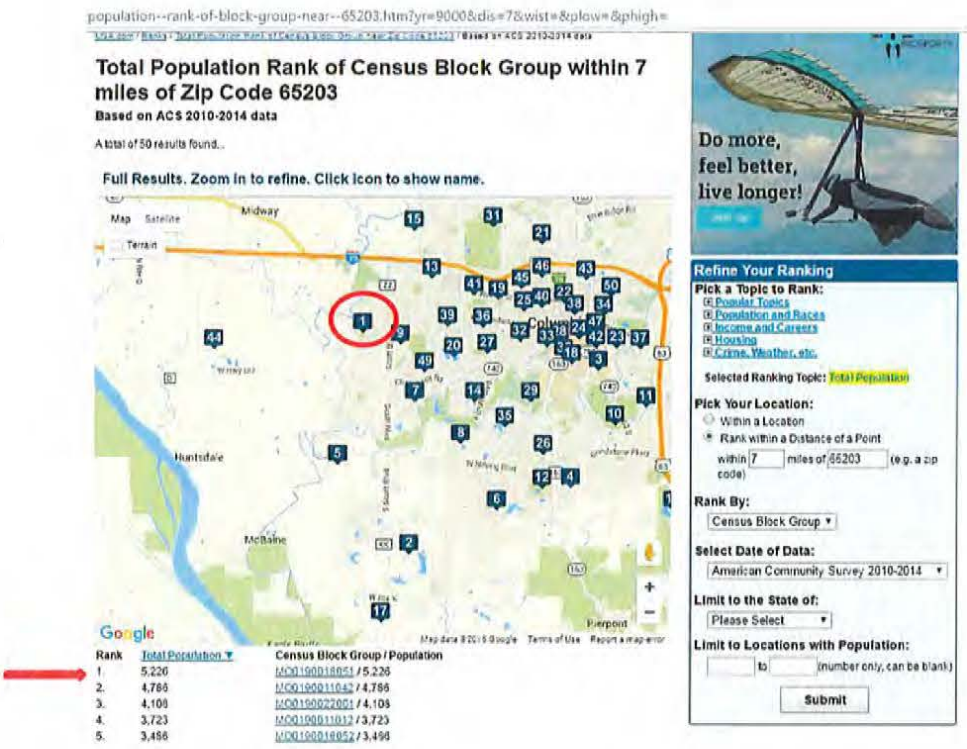
Information about Census Block Group 001805-1 which borders the proposed Breckenridge development.

Block groups (BGs) are the next level above census blocks in the geographic hierarchy (see Figure 2-1 in Chapter 2). A BG is a combination of census blocks that is a subdivision of a census tract or block numbering area (BNA). (A county or its statistically equivalent entity contains either census tracts or BNAs; it can not contain both.) A BG consists of all census blocks whose numbers begin with the same digit in a given census tract or BNA; for example, BG 3 includes all census blocks numbered in the 300s. The BG is the smallest geographic entity for which the decennial census tabulates and publishes sample data. It has now largely replaced the earlier enumeration district (ED) as a small-area geographic unit for purposes of data presentation.

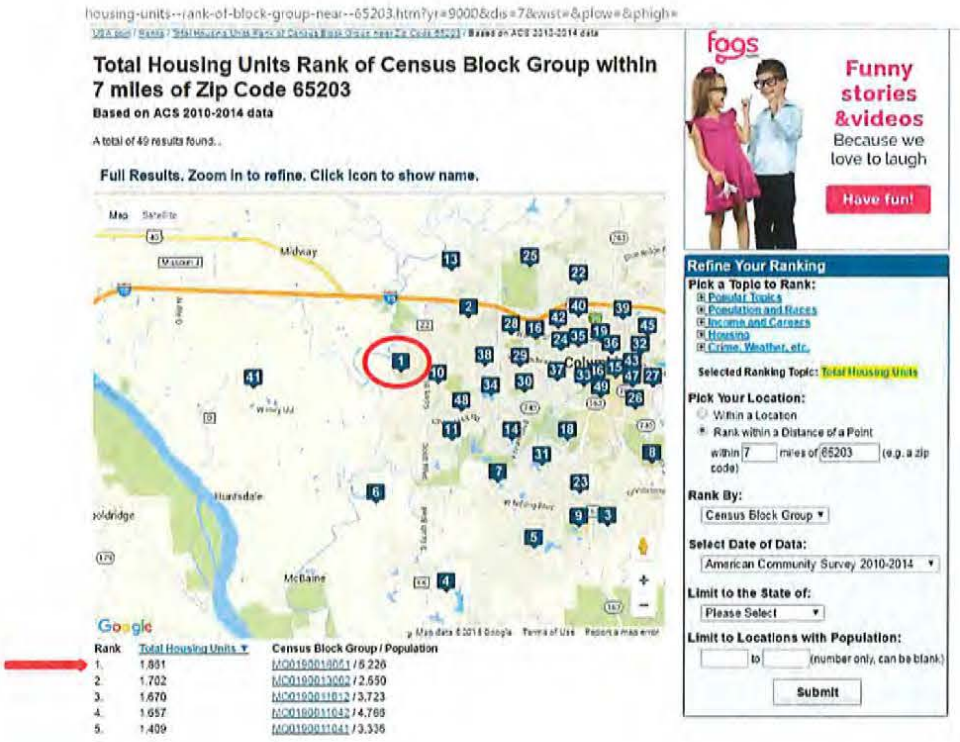
http://www2.census.gov/geo/pdfs/reference/GARM/Ch11GARM.pdf



According to the most recent Census data, the block in which the proposed development is being planned already has the highest population in Columbia South of I-70 and West of US-63 and the 2nd highest population in the entire Columbia Metro area.



According to the most recent Census data, the block in which the proposed development is being planned also has the most housing units in Columbia South of I-70 and West of US-63 and the 3rd highest number of units in the entire Columbia Metro area.



housing-units--rank-of-block-group-near--65203.htm?yr=9000&dis=7&wist=&plow=&phigh=

Total Housing Units Rank of Census Block Group within 7 miles of Zip Code 65203

Based on ACS 2010-2014 data

A total of 49 results found.

Full Results. Zoom in to refine. Click icon to show name.

Rank	Total Housing Units	Census Block Group / Population
1.	1,881	MO0190018001 / 6,226
2.	1,702	MO0190013002 / 2,650
3.	1,670	MO0190011012 / 3,723
4.	1,657	MO0190011042 / 4,766
5.	1,409	MO0190011041 / 3,336

Refine Your Ranking

Pick a Topic to Rank:
- Popular Topics
- Population and Races
- Income and Careers
- Housing
- Crime, Weather, etc.

Selected Ranking Topic: Total Housing Units

Pick Your Location:
- Within a Location
- Rank within a Distance of a Point

within 7 miles of 65203 (e.g. a zip code)

Rank By: Census Block Group

Select Date of Data: American Community Survey 2010-2014

Limit to the State of: Please Select

Limit to Locations with Population: to (number only, can be blank)

Submit

This block has the 3rd highest concentration of children age 5 or less at 9.2%

mtage-of-population-age-5-or-less--rank-of-block-group-near--65203.htm?yr=8000&dis=7&wist=&plow=&phigh=

USA.COM

Local Data Search

Search State, County, City, Zip Code, or Area Code

Percentage of Population Age 5 or Less Rank of Census Block Group within 7 miles of Zip Code 65203

Based on US Census 2010 data

A total of 49 results found. Show Results on Map

Rank	Percentage of Population Age 5 or Less	Census Block Group / Population
1.	14.6%	MO0190013001 / 1,215
2.	9.2%	MO0190018052 / 3,264
3.	9.2%	MO0190018051 / 4,628
4.	8.9%	MO0190007001 / 734
5.	8.1%	MO0190011042 / 3,920
6.	7.7%	MO0190021001 / 816
7.	7.6%	MO0190009002 / 713
8.	7.5%	MO0190014004 / 2,711
9.	7.1%	MO0190021002 / 1,472
10.	6.9%	MO0190012011 / 1,079
11.	6.6%	MO0190014002 / 1,607
12.	6.7%	MO0190010011 / 1,316
13.	6.3%	MO0190013002 / 2,618
14.	6.2%	MO0190012022 / 2,882
15.	6.1%	MO0190017021 / 1,852
16.	6.0%	MO0190014003 / 1,191
17.	5.9%	MO0190005002 / 930
18.	5.7%	MO0190012013 / 3,055
19.	5.7%	MO0190011033 / 1,201
20.	5.7%	MO0190011041 / 3,444
21.	5.6%	MO0190007002 / 1,543
22.	5.5%	MO0190008001 / 793
23.	5.5%	MO0190005003 / 1,237
24.	5.5%	MO0190011031 / 1,421
25.	5.4%	MO0190001004 / 1,284
26.	5.3%	MO0190007003 / 1,265
27.	5.3%	MO0190012012 / 1,042
28.	5.0%	MO0190010023 / 777

Refine Your Ranking

Pick a Topic to Rank:

- Popular Topics
- Population and Races
- Income and Careers
- Housing
- Crime, Weather, etc.

Selected Ranking Topic: Percentage of Population Age 5 or Less

Pick Your Location:

- Within a Location
- Rank within a Distance of a Point

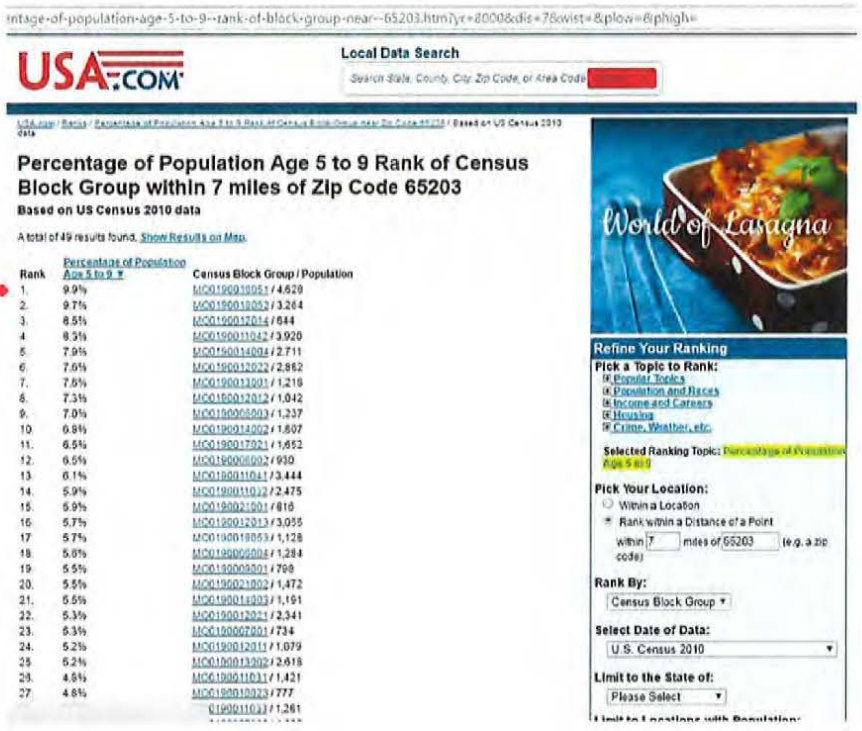
within 7 miles of 65203 (e.g. a zip code)

Rank By: Census Block Group

Select Date of Data: U.S. Census 2010

Limit to the State of: Please Select

This block has the highest concentration of children age 5-9 at 9.9%



ntage-of-population-age-5-to-9--rank-of-block-group-near--65203.htm?y=8000&dis=7&wist=&plow=&phigh=

USA.COM

Local Data Search

Search State, County, City, Zip Code, or Area Code

Percentage of Population Age 5 to 9 Rank of Census Block Group within 7 miles of Zip Code 65203

Based on US Census 2010 data

A total of 49 results found. Show Results on Map.

Rank	Percentage of Population Age 5 to 9	Census Block Group / Population
1.	9.9%	MO0190019051 / 4,629
2.	9.7%	MO0190019052 / 3,264
3.	8.5%	MO0190012014 / 644
4	8.5%	MO0190011042 / 3,920
5.	7.9%	MO0190014004 / 2,711
6.	7.6%	MO0190012022 / 2,862
7.	7.6%	MO0190013001 / 1,216
8.	7.3%	MO0190012012 / 1,042
9.	7.0%	MO0190008003 / 1,237
10.	6.8%	MO0190014002 / 1,807
11.	6.5%	MO0190017021 / 1,652
12.	6.5%	MO0190008002 / 930
13.	6.1%	MO0190011041 / 3,444
14.	5.9%	MO0190011012 / 2,475
15.	5.9%	MO0190021001 / 816
16.	5.7%	MO0190012013 / 3,055
17	5.7%	MO0190018053 / 1,128
18.	5.6%	MO0190005004 / 1,284
19.	5.5%	MO0190009001 / 798
20.	5.5%	MO0190021002 / 1,472
21.	5.5%	MO0190014003 / 1,191
22.	5.3%	MO0190012021 / 2,341
23.	5.3%	MO0190007001 / 734
24.	5.2%	MO0190012011 / 1,079
25.	5.2%	MO0190013002 / 2,618
26.	4.6%	MO0190011031 / 1,421
27.	4.6%	MO0190010023 / 777
		0190011033 / 1,261

Refine Your Ranking

Pick a Topic to Rank:

- Popular Topics
- Population and Races
- Income and Careers
- Housing
- Crime, Weather, etc.

Selected Ranking Topic: Percentage of Population Age 5 to 9

Pick Your Location:

- Within a Location
- Rank within a Distance of a Point

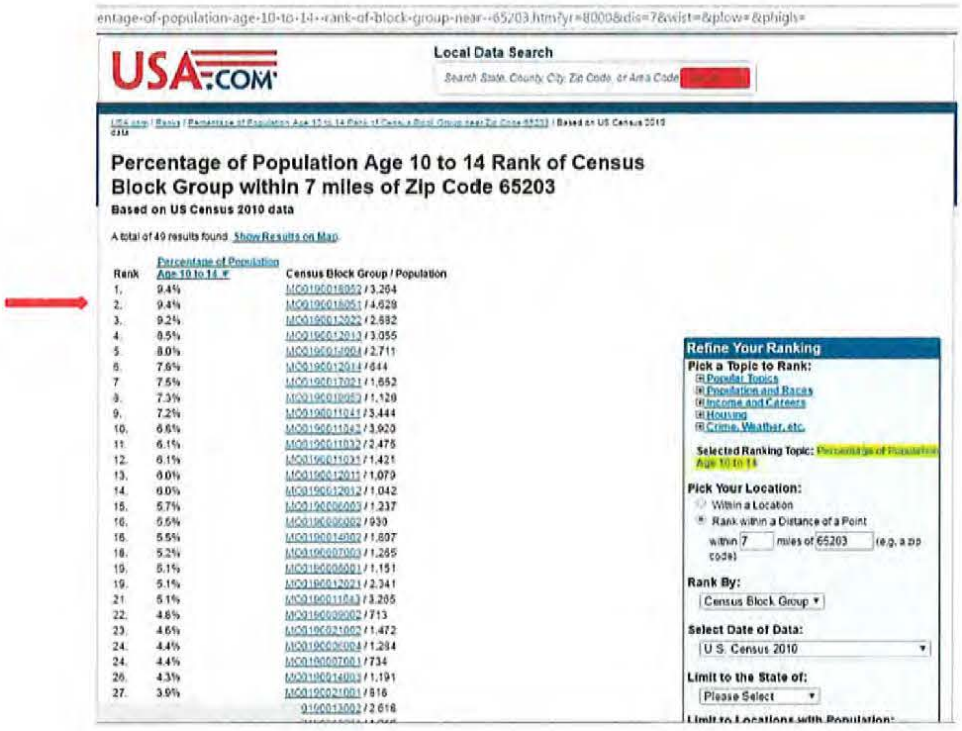
within 7 miles of 65203 (e.g. a zip code)

Rank By: Census Block Group

Select Date of Data: U.S. Census 2010

Limit to the State of: Please Select

This block has the 2nd highest concentration of children age 10-14 at 9.4%



entage-of-population-age-10-to-14-rank-of-block-group-near-65203.htm?yr=8000&dis=7&wist=&plow=&phigh=

USA.COM

Local Data Search

Search State, County, City, Zip Code, or Area Code

Percentage of Population Age 10 to 14 Rank of Census Block Group within 7 miles of Zip Code 65203

Based on US Census 2010 data

A total of 49 results found. Show Results on Map

Rank	Percentage of Population Age 10 to 14	Census Block Group / Population
1.	9.4%	MO0190018052 / 3,264
2.	9.4%	MO0190018051 / 4,629
3.	9.2%	MO0190012022 / 2,682
4.	8.5%	MO0190012013 / 3,055
5.	8.0%	MO0190015004 / 2,711
6.	7.6%	MO0190012014 / 644
7.	7.5%	MO0190017021 / 1,652
8.	7.3%	MO0190018062 / 1,120
9.	7.2%	MO0190011041 / 3,444
10.	6.6%	MO0190011042 / 3,920
11.	6.1%	MO0190011032 / 2,475
12.	6.1%	MO0190011031 / 1,421
13.	6.0%	MO0190012011 / 1,079
14.	6.0%	MO0190012012 / 1,042
15.	5.7%	MO0190006003 / 1,237
16.	5.5%	MO0190006002 / 930
16.	5.5%	MO0190014002 / 1,807
18.	5.2%	MO0190007003 / 1,265
19.	5.1%	MO0190006001 / 1,151
19.	5.1%	MO0190012021 / 2,341
21.	5.1%	MO0190011043 / 3,205
22.	4.8%	MO0190009002 / 713
23.	4.6%	MO0190021002 / 1,472
24.	4.4%	MO0190020004 / 1,284
24.	4.4%	MO0190007001 / 734
26.	4.3%	MO0190014003 / 1,191
27.	3.9%	MO0190021001 / 816
		0190013002 / 2,618

Refine Your Ranking

Pick a Topic to Rank:

- Popular Topics
- Population and Races
- Income and Careers
- Housing
- Crime, Weather, etc.

Selected Ranking Topic: Percentage of Population Age 10 to 14

Pick Your Location:

- Within a Location
- Rank within a Distance of a Point

within 7 miles of 65203 (e.g. a zip code)

Rank By: Census Block Group

Select Date of Data: U.S. Census 2010

Limit to the State of: Please Select

Limit to Locations with Population:

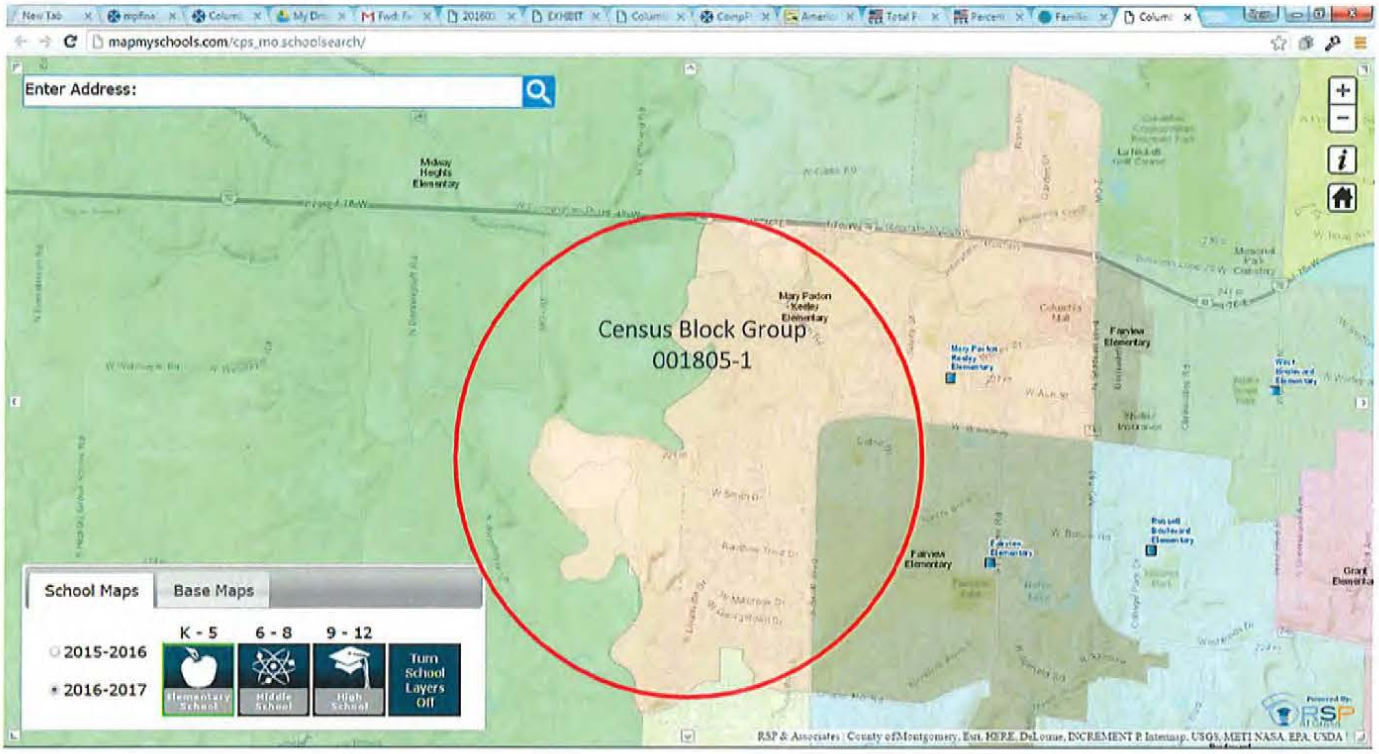
An overview of the three census blocks that lie within the Paxton Keeley Elementary School boundaries

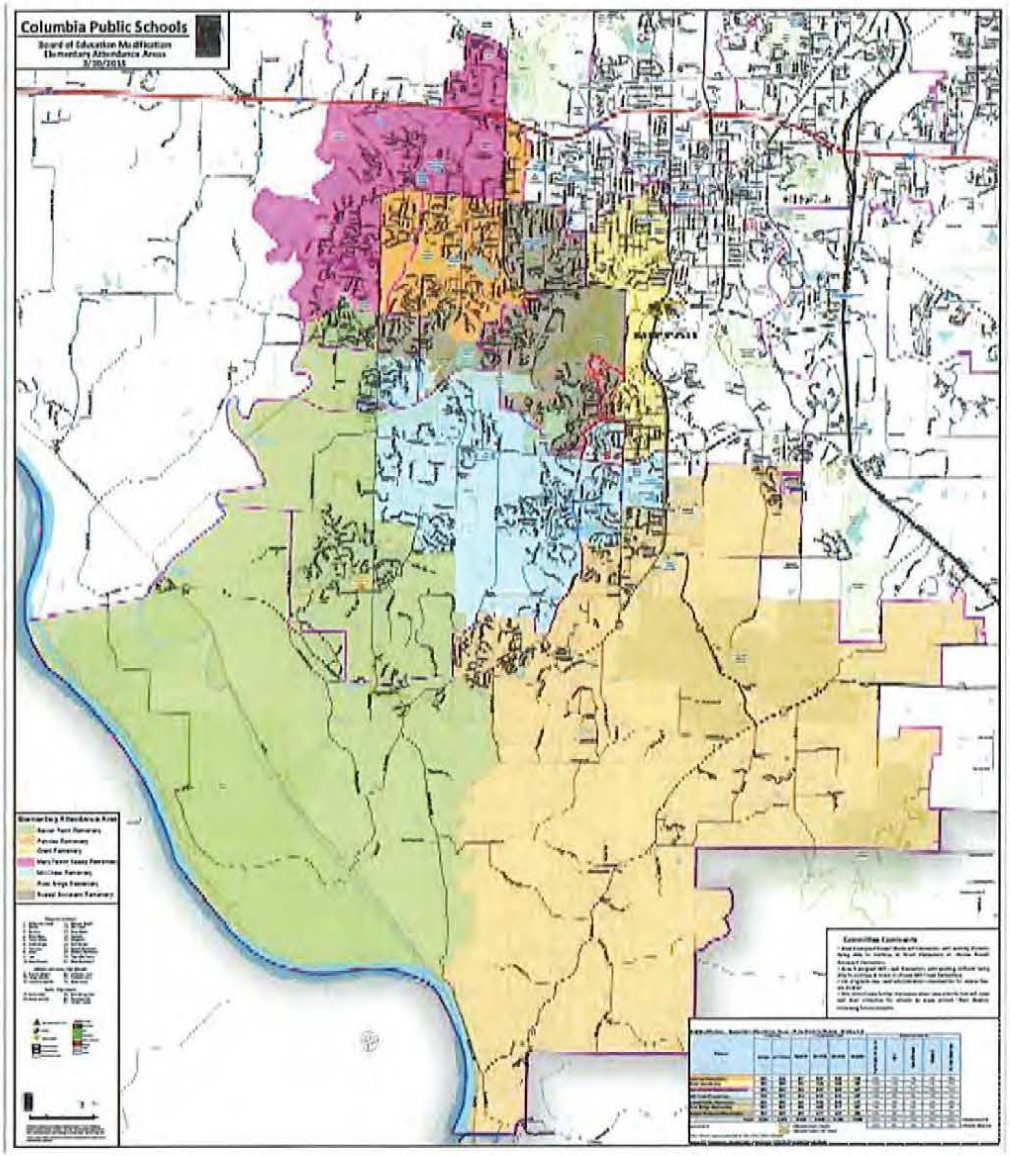
Census Data for the 3 Census Block Groups that lie within the Paxton Keeley School Boundaries

* approx. 2/3 of the population of this Census Block Group lies within the Paxton School Boundaries and 1/3 in the West Blvd.Elementary boundaries. The population of 2000 and 793 housing units is a proportional estimation of the actual total.

Census Block Group	001805-1	001300-2	001400-4*	Total	(actual) 001400-4*	Census Block Group
2010 Population	4628	2618	2000	9246	2711	2010 Population
Housing units	1678	1594	793	4065	1076	Housing units
Total Households	1611	1442	752	3805	1020	Total Household
U.S Census Proj. of Persons # Per Household	2.87	1.82	2.65	2.43	2.65	U.S Census Proj. of # Per Household
% Age 0-5	9.20%	6.30%	7.50%		7.50%	% 0-5
% Age 5-9	9.90%	5.20%	7.90%		7.90%	% 5-9
% Age 10-14	9.40%	3.90%	8.00%		8.00%	% 10-14
CPS Estimate of Aprox. Enrollment at P.K.E.S. (2016-2020)				650		
% of Total Population Enrolled at P.K.E.S.				7.03%		

A map of the Paxton Keeley Elementary School boundaries showing Census Block Group 001805-1. The largest of 3 block groups that feed into Paxton Keeley Elementary School.





This is the Columbia Public Schools Board of Education's Map of Modification of the Elementary Attendance Areas that was made on 03/30/2015. This was an effort to reduce overcrowding in the schools that are referenced in this map and was designed to balance the elementary schools' populations based on demographic and economic factors as well as projected growth on developable land within the boundaries of Columbia Public Schools.

This chart from Columbia Public Schools illustrates that Paxton Keeley will be at or over capacity for at least the next 5 years. This is not a coincidence, considering that one of the 3 Census Blocks that feeds the school is already the largest in population, housing and school age children that is located within the Elementary Attendance Area map on the previous page. Paxton Keeley is also one of the most demographically diverse schools on this map.

BOE Modification - Elementary Attendance Areas - Projections by Reside - Grades K-5

School	Capacity		Projection Year				Super Group %					
	Design	w/ Trailers	2016/17	2017/18	2018/19	2019/20	Free/Reduced Lunch	ESL	Special Needs	Hispanic	African American	
Fairview Elementary	550	635	537	540	543	529	32%	13%	7%	4%	15%	
Grant Elementary	250	350	293	294	293	287	38%	13%	8%	4%	20%	
Mary Paxton Keeley Elementary	650	650	649	650	652	647	33%	18%	8%	6%	12%	
Mill Creek Elementary	700	875	619	623	632	637	14%	3%	6%	3%	7%	
Beulah Ralph Elementary	650	650	540	568	596	617	24%	4%	7%	3%	14%	
Rock Bridge Elementary	520	630	489	498	517	537	29%	5%	6%	3%	9%	
Russell Boulevard Elementary	500	625	408	417	402	395	23%	5%	6%	4%	4%	
Total	**3,820**	**4,415**	**3,537**	**3,590**	**3,636**	**3,648**	28%	9%	7%	4%	11%	= Study Area K-5
							47%	9%	9%	7%	20%	= District Wide K-5

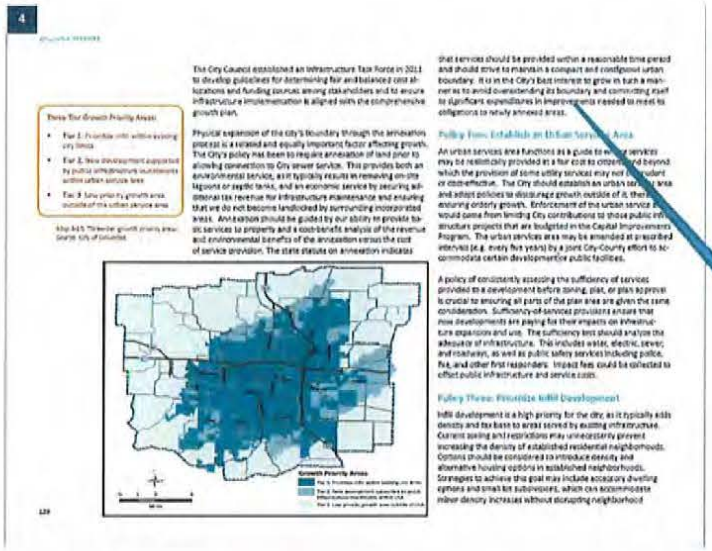
Date: 03/30/15

= Exceeds Design Capacity

= Exceeds Capacity W/ Trailers

Note: School capacity provided by Columbia Public Schools

Source: RSP & Associates, Columbia Public School District, 2014/15 CPS Student Forecast Model

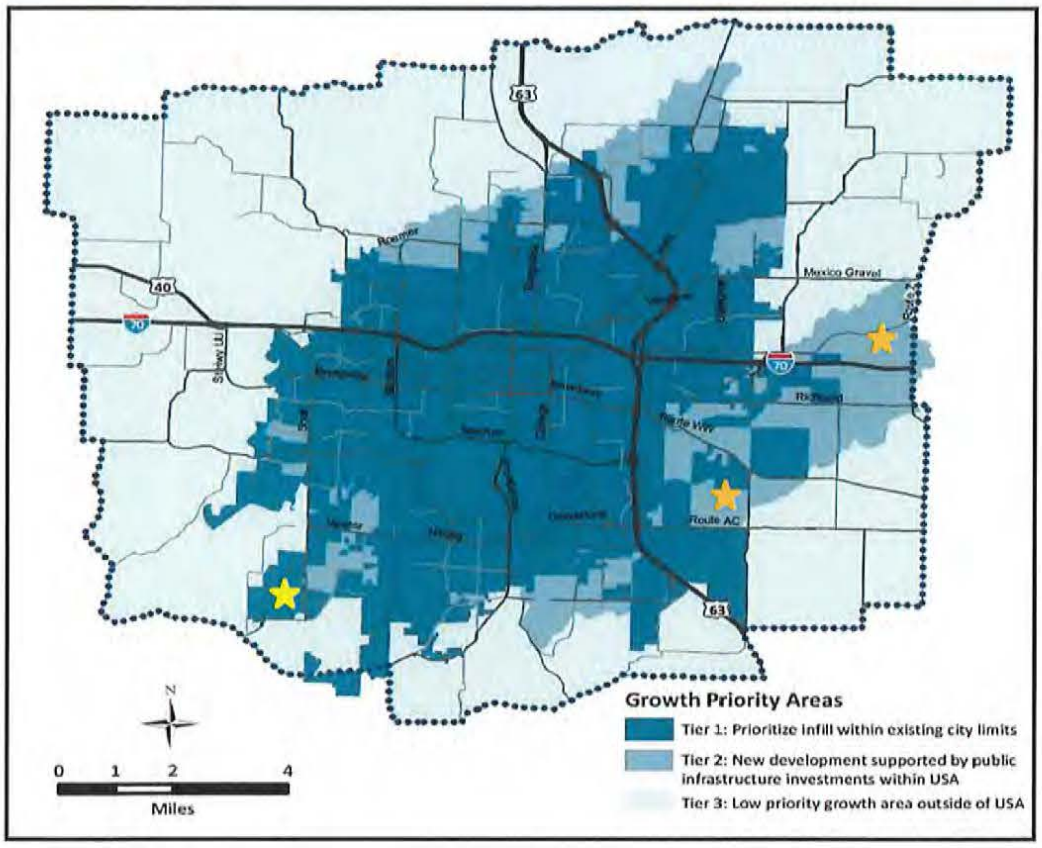


The City of Columbia already places great emphasis on properly siting schools within the Tier 1 and Tier 2 Growth Priority Areas to match existing and potential growth patterns. Siting new schools require land and infrastructure which, according to the City of Columbia, is more available, affordable and feasible on the North, East and parts South of Columbia. The proposed Breckenridge Development is considered a Tier 3 area partly because of the constraints on growth and existing infrastructure. One of the many constraints is the fact that Paxton Kelley is at or over capacity for many years to come with no feasible solution to the issue and building a new school in the vicinity to accommodate this situation is likely an economically unfeasible prospect that would unduly burden taxpayers.

It is in the City's best interest to grow in such a manner as to avoid overextending its boundary and committing itself to significant expenditures in improvements needed to meet its obligations to newly annexed areas.

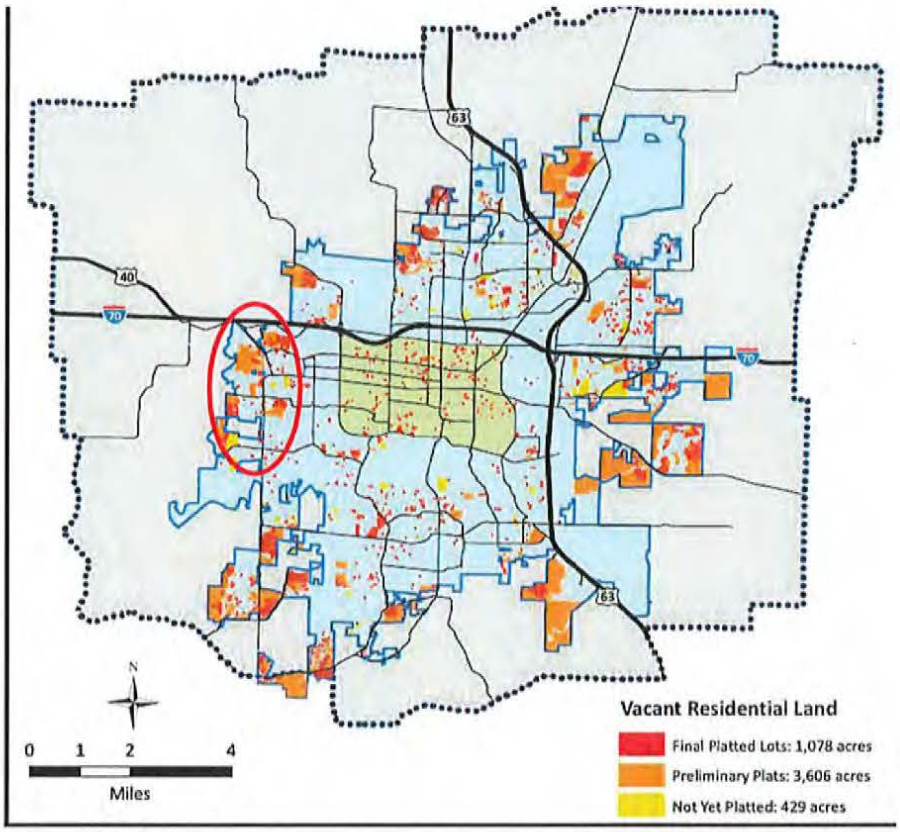
Specifically, recognizing the relationship between the siting of new schools and residential growth is an area in which additional cooperation will yield growth management opportunities. Development pressures in the north and east have resulted from the development of new schools and vice versa. As Columbia Public Schools seeks new locations, working with the City, Boone County, and other applicable agencies will ensure the proper infrastructure is in place to support not only the school but the development likely to be generated by the new school. At the same time, new schools require large sites, auxiliary services, and adequate infrastructure. Thus, Boone County and the City may assist Columbia Public Schools in identifying growth trends and where new schools will be needed. Encouraging cooperation in school siting in accordance with growth capacity and desirability is a key priority.

★	Location of Beulah Ralph Elementary proposed to open 2017
★	Proposed location of new elementary in SE slated to open 2018
★	Proposed location of new elementary in NE to open in the future



The location of Columbia Public Schools' 3 new elementary schools are consistent with the desire to develop within the parameters of the City of Columbia's Tier 1 and Tier 2 Growth Priority Areas. Columbia Public Schools have redistricted twice in the past 4 years. Once, to draw new boundaries for the newly constructed Battle High School and the second time to establish the new boundaries for Beulah Ralph Elementary school which was built to accommodate past and continuing rapid growth on the Columbia's South side which led to severe overcrowding in the schools on the central and west side of Columbia. Continued growth on Columbia's south end will keep Beulah Ralph Elementary close to capacity over the next 5 years. This fact leaves very few options for schools in west central Columbia to accommodate new students that would brought in as a result of additional growth outside of the existing city limits.

The land within the Paxton Keeley boundaries and also within the Urban Service Area already contains developable property that will continue to be developed and continue to put pressure on the capacity of the school over the course of the next 10-15 years even without the annexation and development of the Breckenridge property.

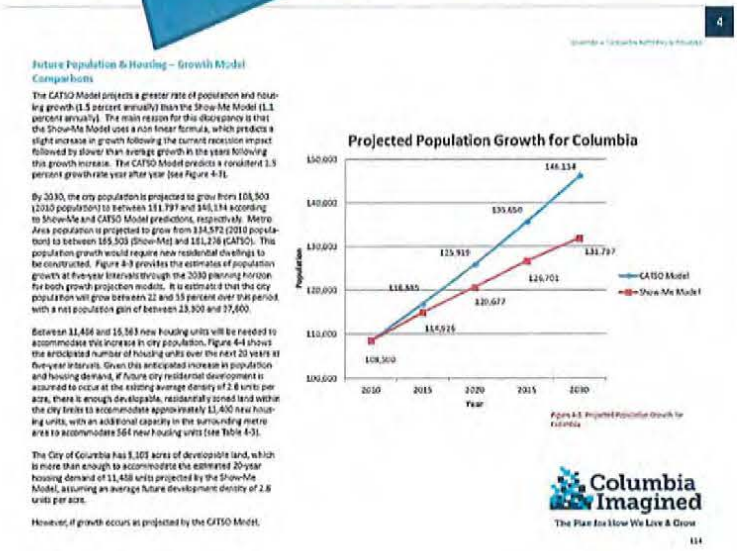


Map 4-5: Vacant Residential Land
Source: Boone County and City of Columbia

Below (Highlighted in green) is a population estimate from 2016-2030 based on Census Data starting in 2010 and projecting growth using the CATSO growth estimate of 1.5%. If the CATSO growth projection holds true, then the three census groups making up the Paxton Keeley School Boundaries can expect growth of an additional 2500 persons.

Future Population & Housing – Growth Model Comparisons

The CATSO Model projects a greater rate of population and housing growth (1.5 percent annually) than the Show-Me Model (1.1percent annually). The main reason for this discrepancy is that the Show-Me Model uses a nonlinear formula, which predicts a slight increase in growth following the current recession impact followed by slower than average growth in the years following this growth increase. The CATSO Model predicts a consistent 1.5 percent growth rate year after year (see Figure 4-3).



Projected Population Growth in the Paxton Keely School Boundaries from 2016-2030 Based on CATSO Growth Projections of 1.5%			
Year	Population	Proj. 1.5% Growth Rate	
2010	9246	139	
2011	9385	141	
2012	9525	143	
2013	9668	145	
2014	9813	147	
2015	9961	149	
2016	10110	152	
2017	10262	154	
2018	10416	156	
2019	10572	159	
2020	10730	161	
2021	10891	163	
2022	11055	166	
2023	11221	168	
2024	11389	171	
2026	11560	173	
2026	11733	176	
2027	11909	179	
2028	12088	181	
2029	12269	184	
2030	12453	187	
Total Net Gain in Population 2016-2030		2530	

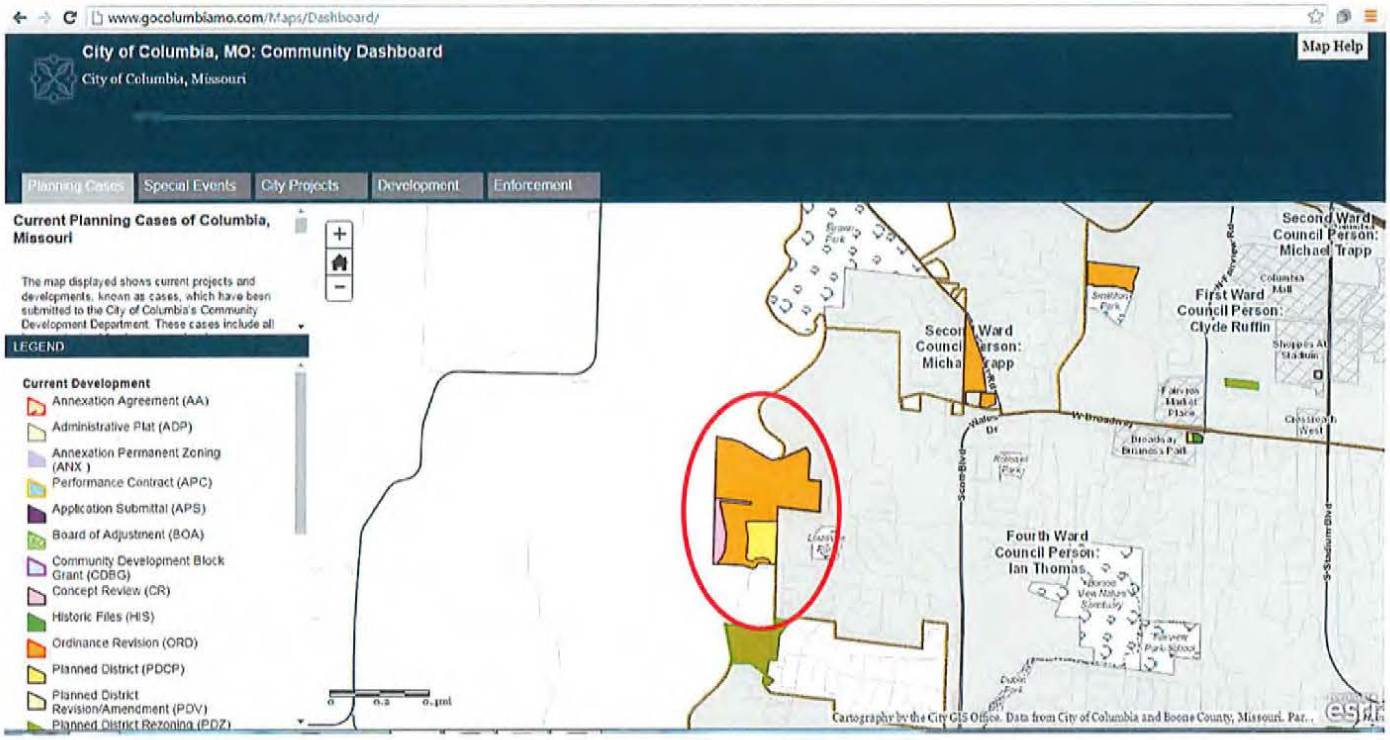
As noted by the following properties listed below that lie within the Urban Services and also within the Paxton Keeley School District there is enough land that lies within this boundary to accommodate enough units to sustain growth projections through, at least, the next 15 years. Even this sustained growth has the potential to add nearly 200 students which is an additional 30% increase to the elementary school population and this is only growth within the Urban Service Area. The proposed Breckenridge development or any other expansion outside the Urban Service Area would add, at a minimum, another 10% to 15% on top of the previous figure.

Currently Zoned Yet Undeveloped Land and It's Projected Potential Household Capacity Within the Paxton Keely School Boundaries

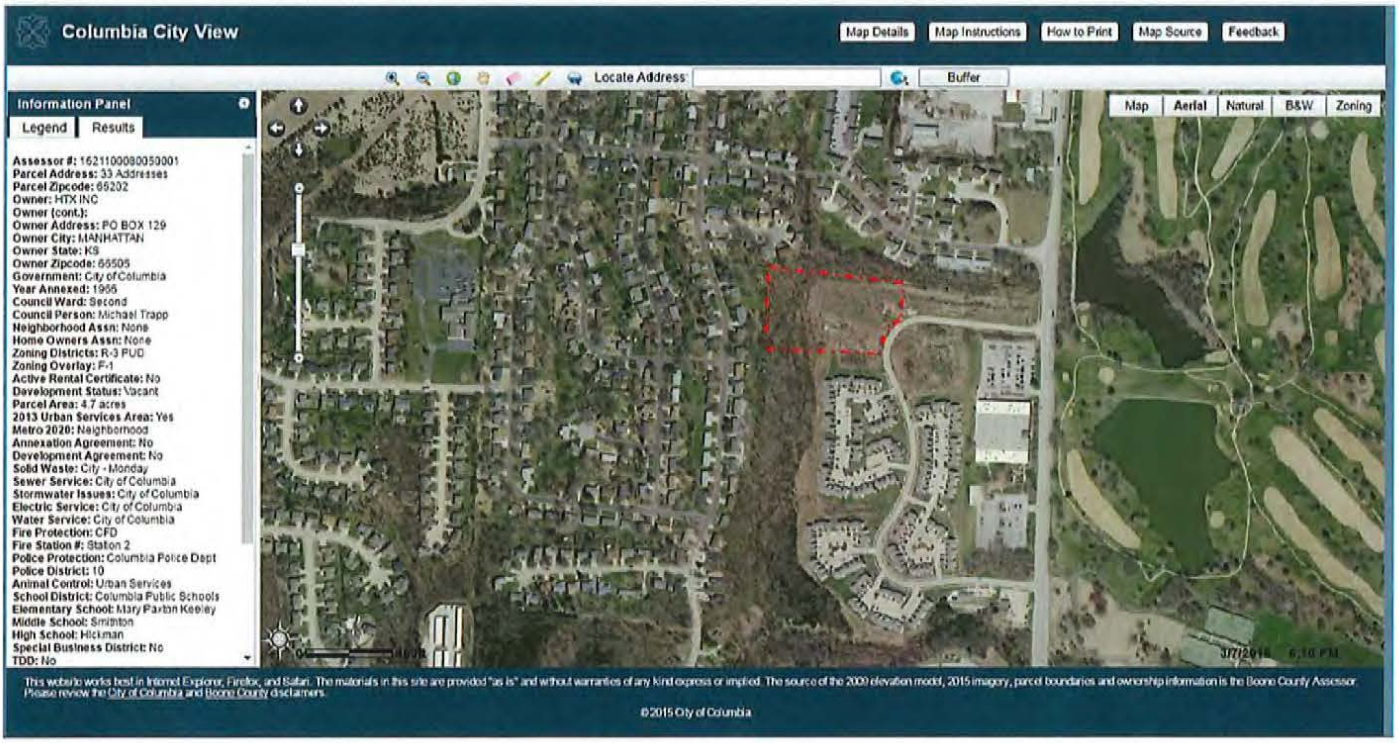
Slide #	Description	Zoned	Acres	Actual/Potential Units
1	Timber Creek/Four Winds Villages Lot 8	R-3 PUD	4.7	33
2	Timber Creek/Four Winds Villages Lot 9	R-3 PUD	1.9	21
3	Timber Creek/Four Winds Villages Lot 7	R-3 PUD	2.5	27
4	Smithton Villa's Plat 1 & 2 & Vintage Falls Plat 1 & 2	PUD	16	99
5	The Reserve	PUD	25.4	70
6	Greenwing Development	R-3	7.1	70
7	Smithton Condo's	R-3	6.9	60
8	Kelly's Ridge	R-3	2.18	33
9	Delwood Phase 3	R-1	21.6	62
10	The Overlook	R-1 & PUD	57.3	159
11	Westbury	PUD	35.2	196
12	Quail Creek	PUD	2	12
13	Miscellaneous property zoned R-1	R-1	24	72
14	Miscellaneous properties zoned F-1 but classified as having Neighborhood status.	F-1	110	220
15	2 properties adjoining the proposed Breckenridge development to the North and the other is 1 parcel to the South, zoned R-1 but classified as having Greenbelt Open status.	R-1	77	0
16			0	0
17			0	0
18			0	0
19			0	0
20			0	0
			393.78	1128

Approx. Total Acres Available	393.78
Total Actual/Potential Units Zoned	1128
Avg. # People Per Household	2.43
Units x Avg. # Per Household	2741.04
Minimum, # of People that Units could accommodate	2741
CATSO Potential Growth 2016-2030	2530
Difference	211
Approx. Paxton Keeley Enrollment	650
Total Population	9246
% of Residence who are Paxton Keeley Students (PK Enrollment / Total Pop)	7.03%
# of additional students that potentially would be added with growth only within the Urban Service Area	193

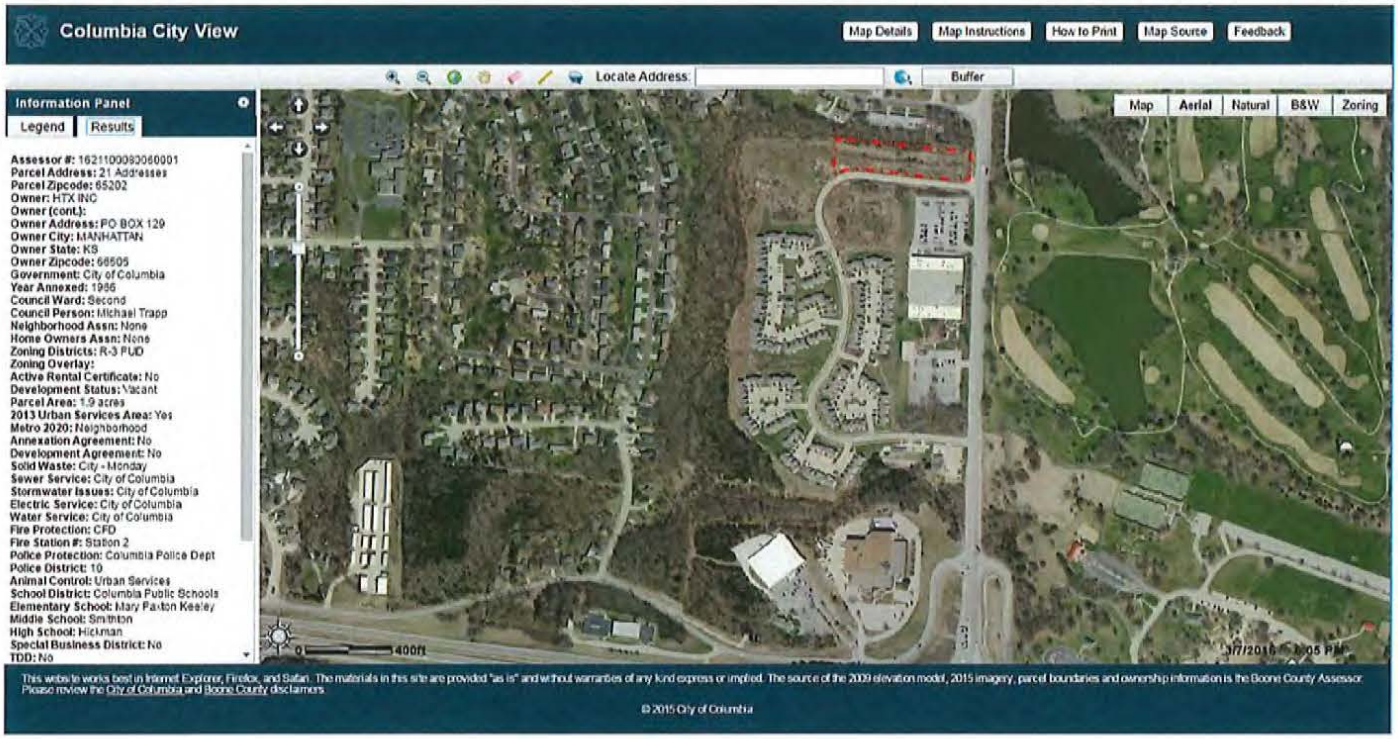
Zoning:	Proposed Breckenridge Estates R-1 & PUD
Parcel Area:	90.7 Acres
Parcel Units:	168
Urban Service Area:	NO
Development Status:	N/A



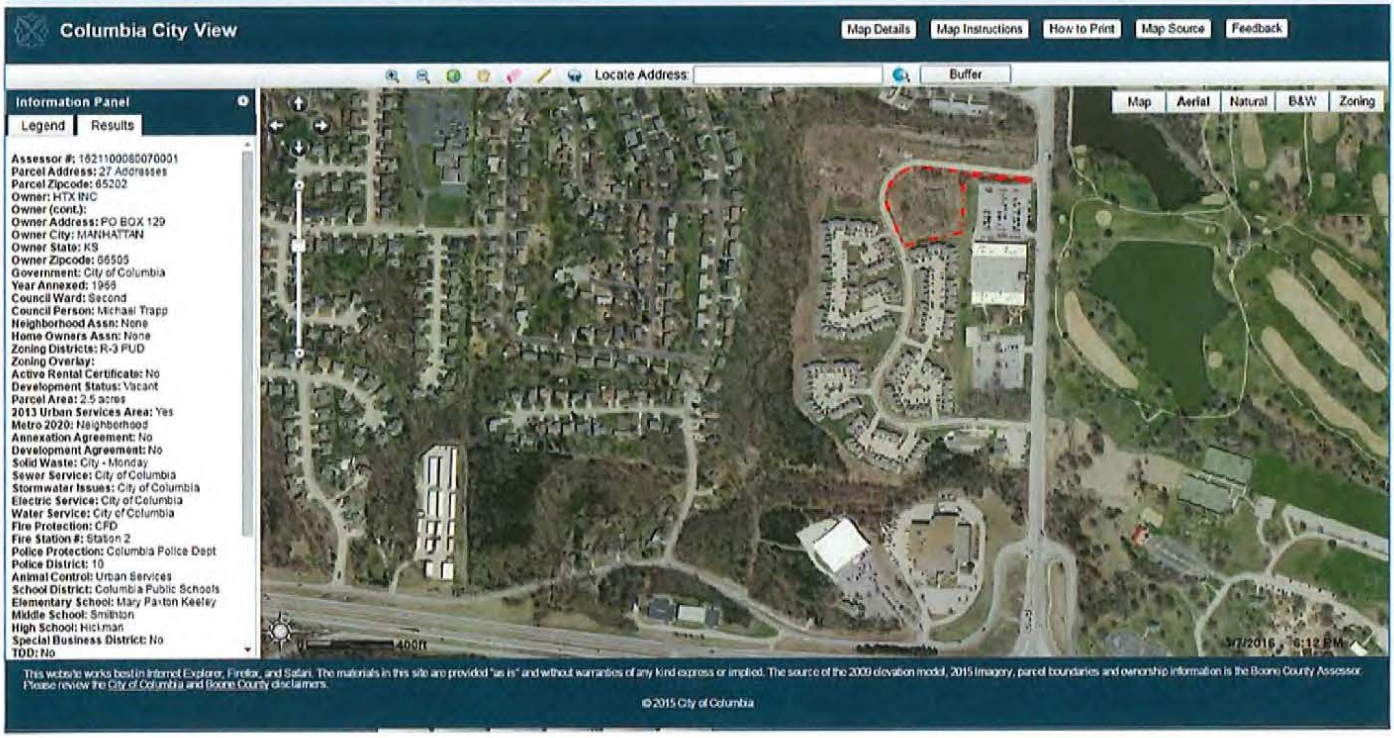
Zoning:	R-3 PUD
Name/Description:	Timber Creek/Four Winds Villages Lot 8
Parcel Area:	4.7 Acres
Parcel Units:	33
Urban Service Area:	Yes
Development Status:	Vacant
Metro 2020 Designation	Neighborhood



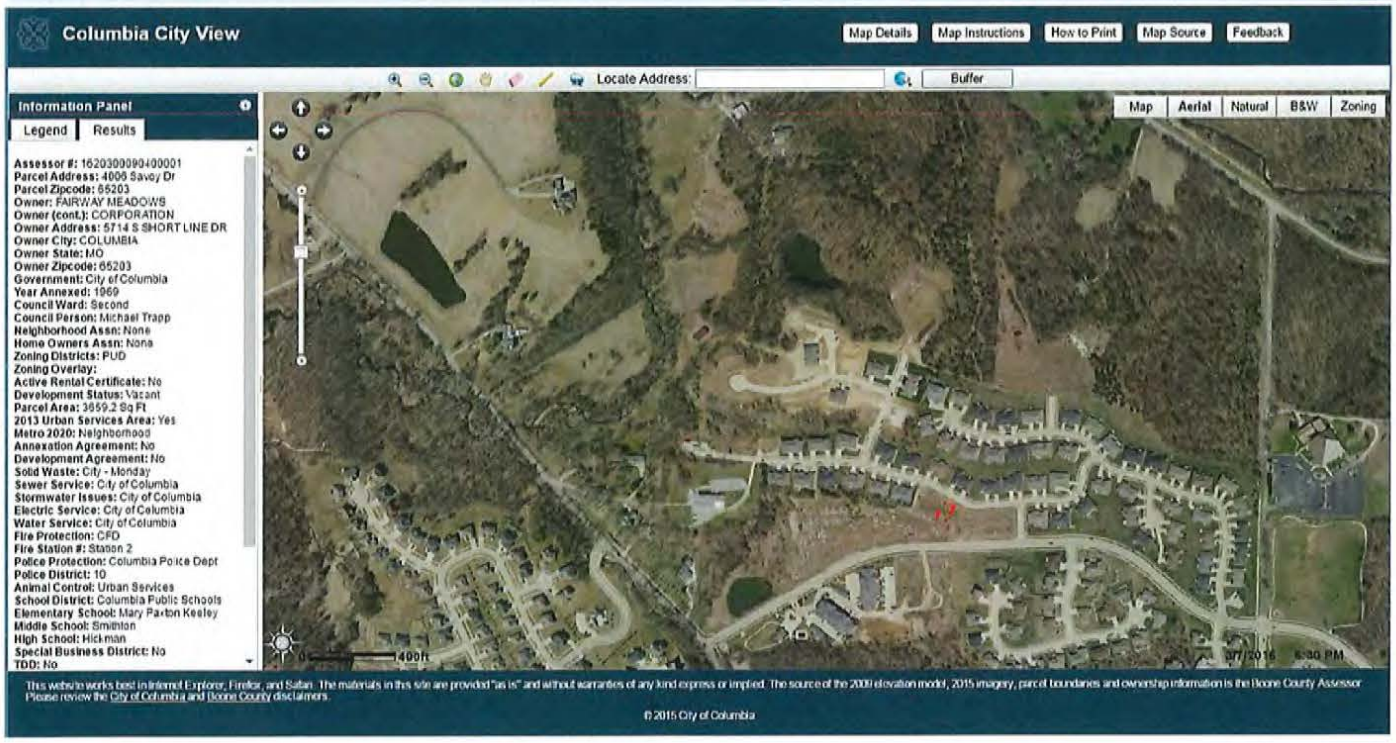
Zoning:	R-3 PUD
Name/Description:	Timber Creek/Four Winds Villages Lot 9
Parcel Area:	1.9 Acres
Parcel Units:	21
Urban Service Area:	Yes
Development Status:	Vacant
Metro 2020 Designation	Neighborhood



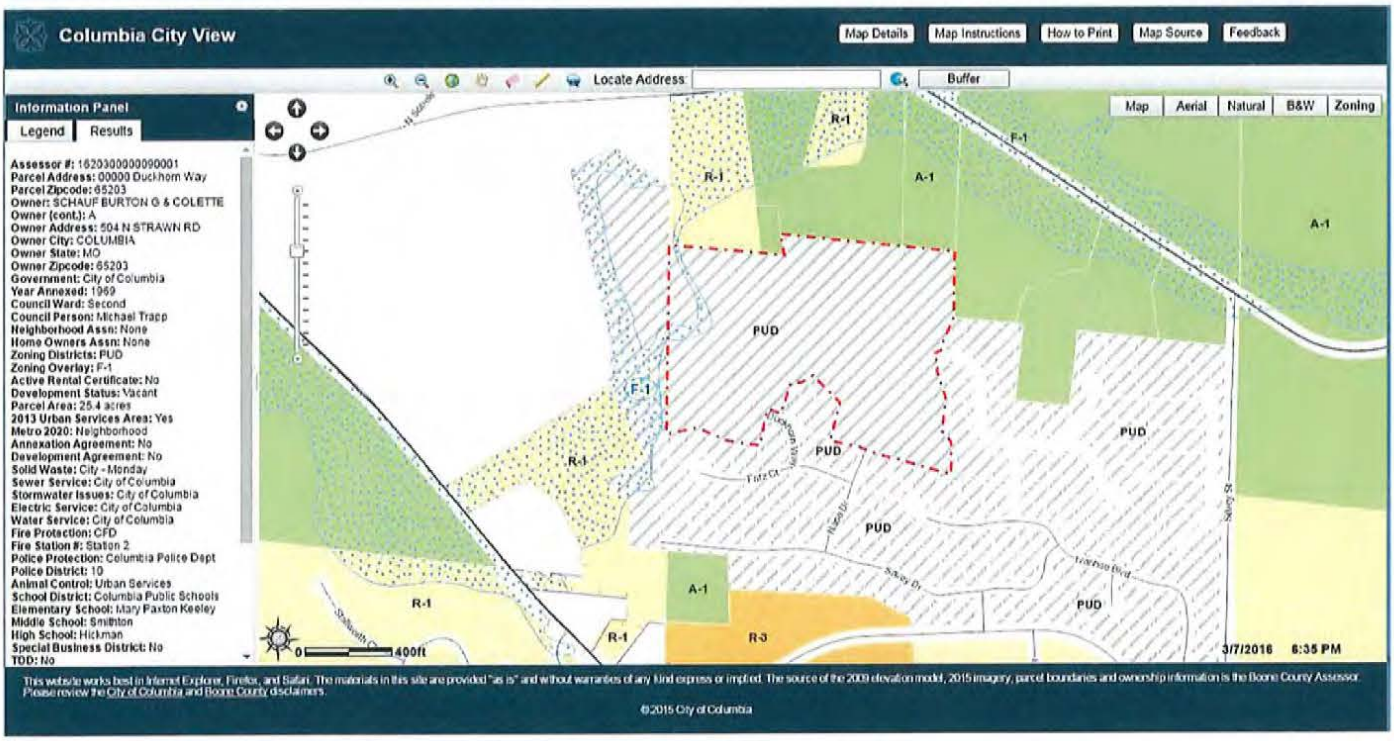
Zoning:	R-3 PUD
Name/Description:	Timber Creek/Four Winds Villages Plat 7
Parcel Area:	2.5 Acres
Parcel Units:	27
Urban Service Area:	Yes
Development Status:	Vacant
Metro 2020 Designation	Neighborhood



Zoning:	PUD
Name/Description:	Smithton Villa's Plat 1 & 2 & Vintage Falls Plat 1 & 2
Parcel Area:	16 Acres
Parcel Units:	95
Urban Service Area:	Yes
Development Status:	Vacant
Metro 2020 Designation	Neighborhood

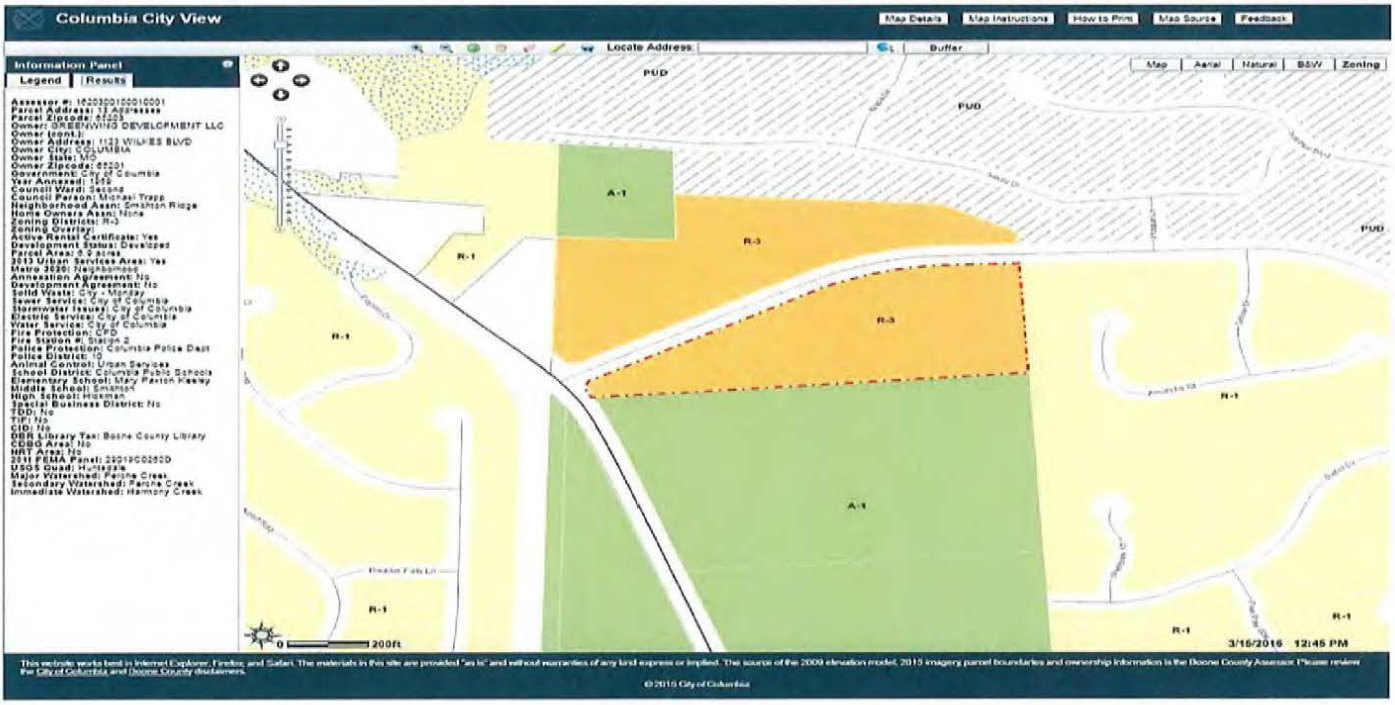


Zoning:	PUD
Name/Description:	The Reserve
Parcel Area:	24.5 Acres
Parcel Units:	70
Urban Service Area:	Yes
Development Status:	Vacant
Metro 2020 Designation	Neighborhood

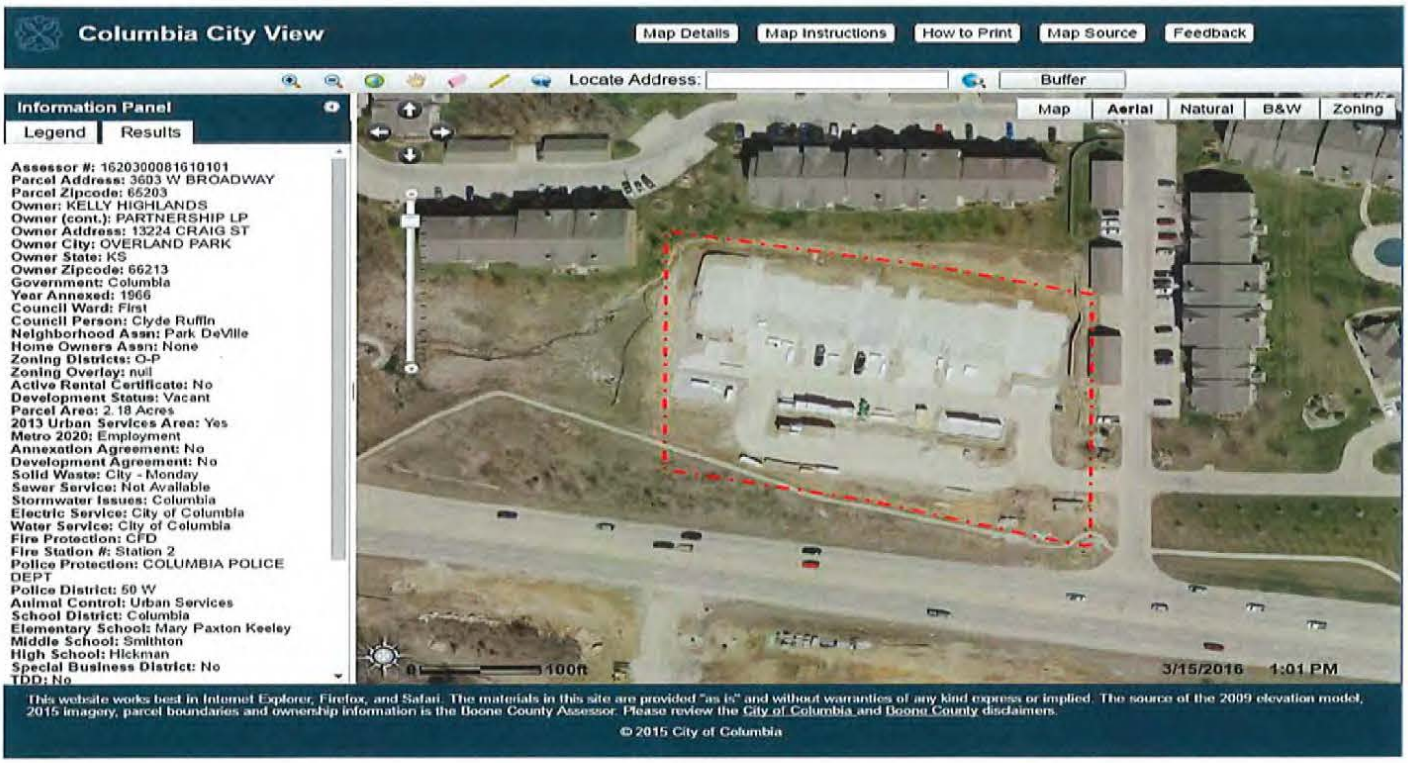


Zoning:	R-3
Name/Description:	Greenwing Development
Parcel Area:	7.1 Acres
Parcel Units:	70
Urban Service Area:	Yes
Development Status:	Vacant
Metro 2020 Designation	Neighborhood

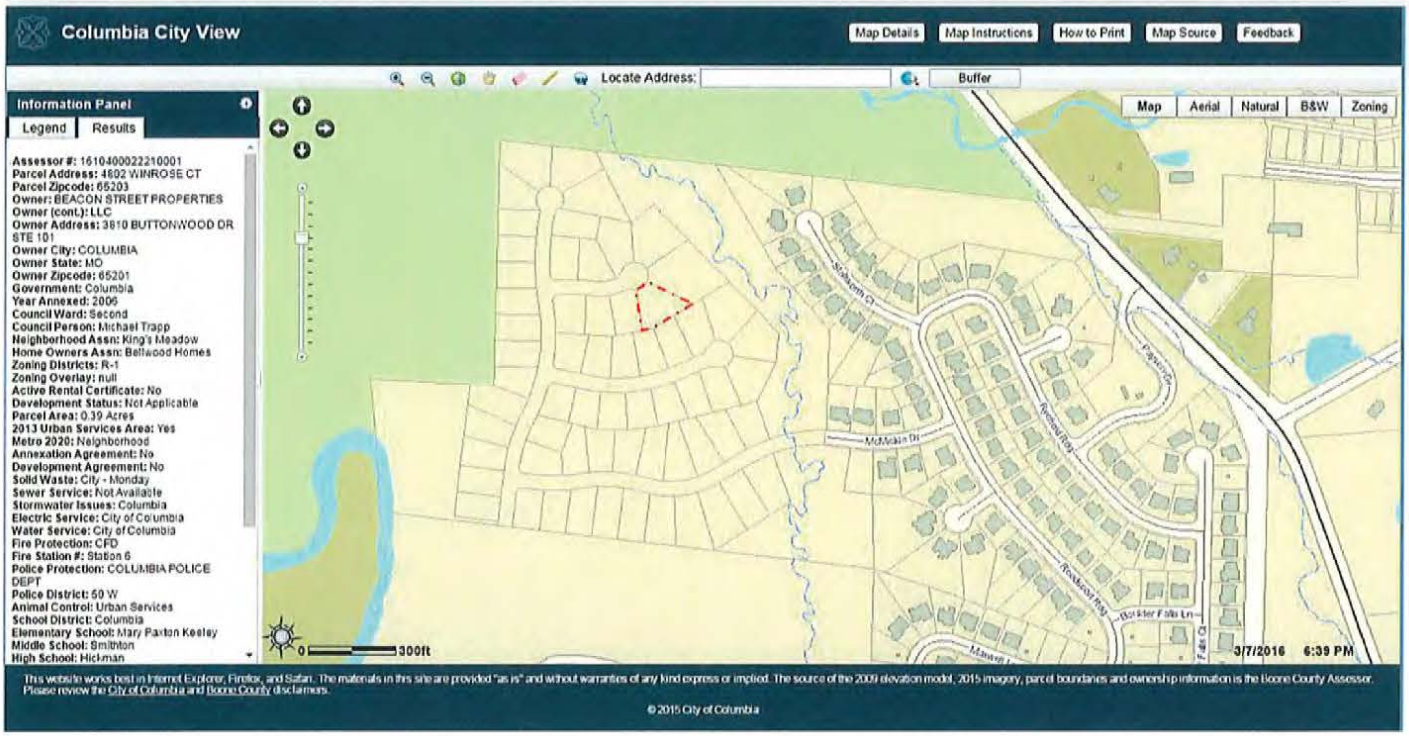
Zoning:	R-3
Name/Description:	Smithton Condos
Parcel Area:	6.9 Acres
Parcel Units:	70
Urban Service Area:	Yes
Development Status:	Developed/Not Complete
Metro 2020 Designation	Neighborhood



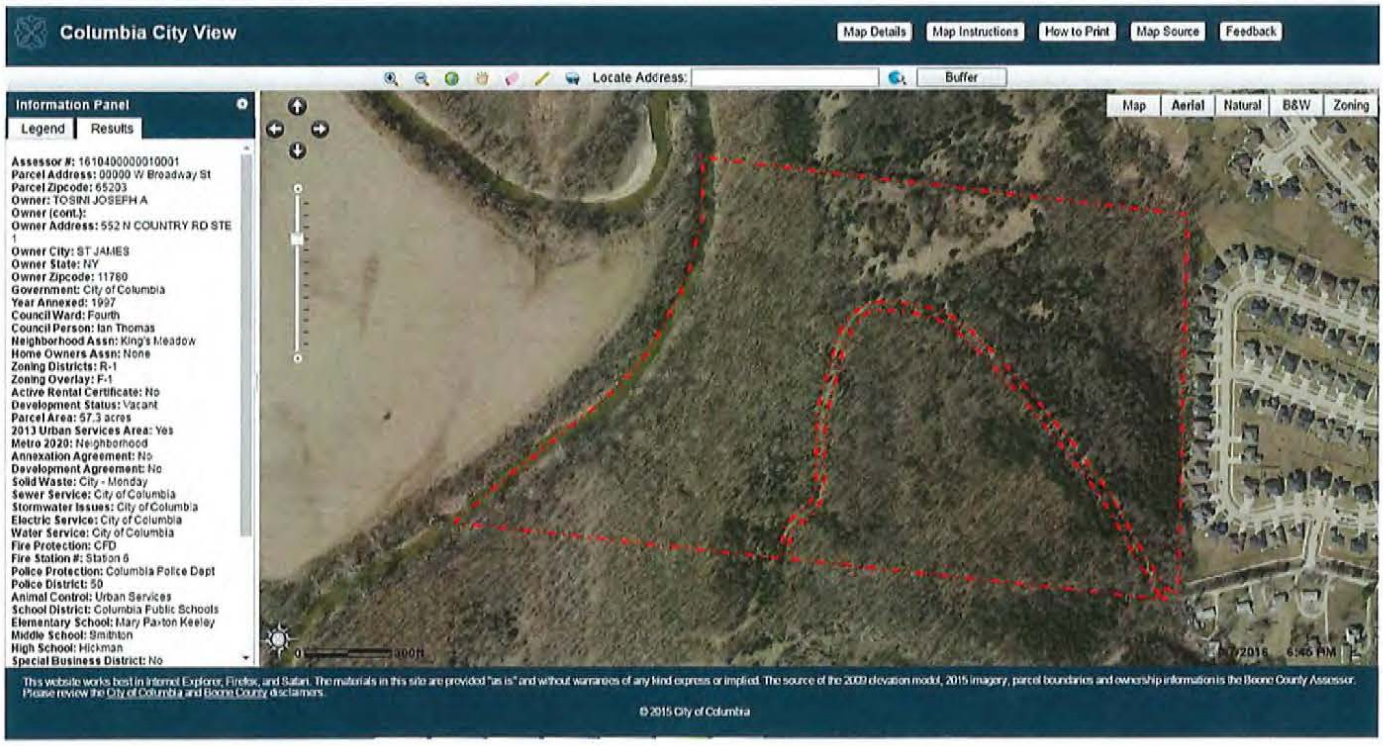
Zoning:	R-3
Name/Description:	Kelly Ridge
Parcel Area:	2.18 Acres
Parcel Units:	33
Urban Service Area:	Yes
Development Status:	Vacant
Metro 2020 Designation	Neighborhood



Zoning:	R-1
Name/Description:	Belwood Phase 3
Parcel Area:	21.6
Parcel Units:	62
Urban Service Area:	Yes
Development Status:	Vacant
Metro 2020 Designation	Neighborhood

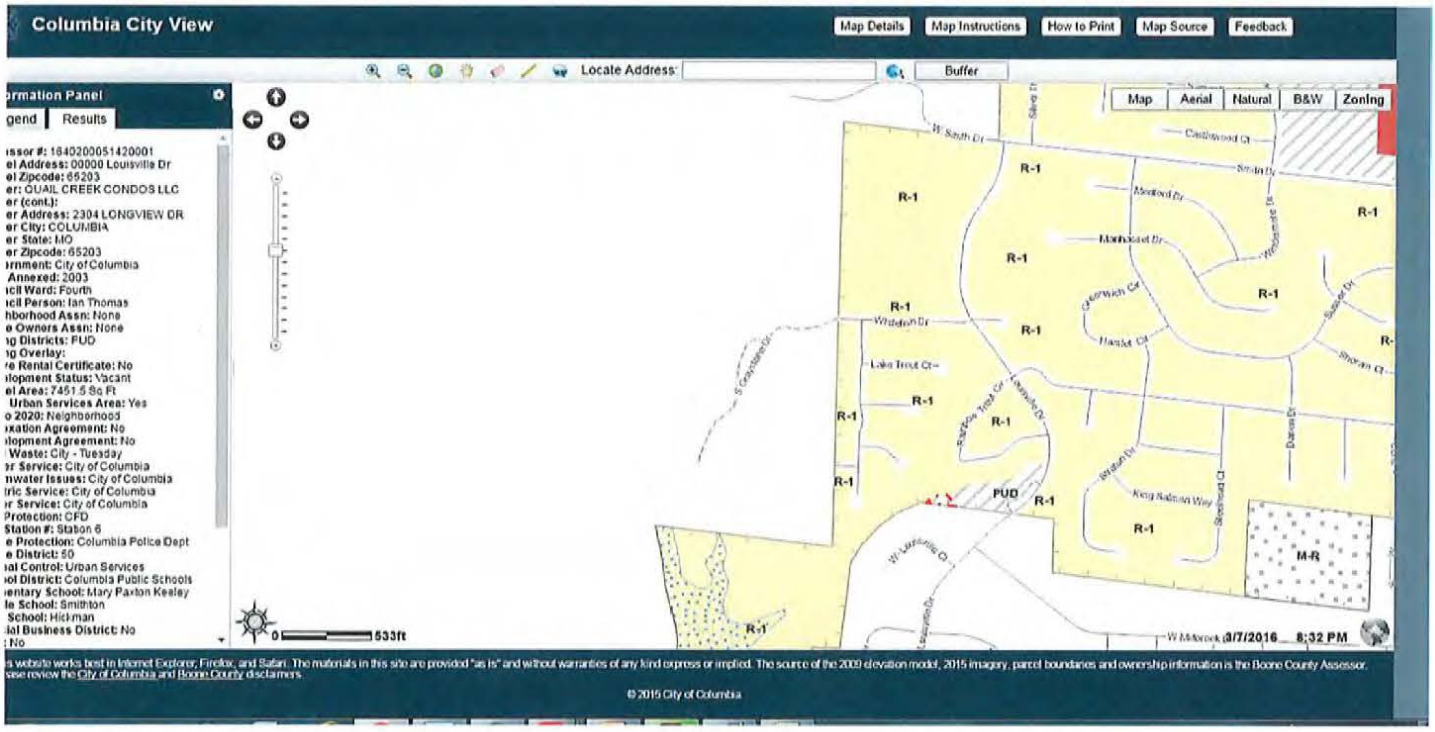


Zoning:	R-1 & PUD
Name/Description:	The Overlook
Parcel Area:	57.3 Acres
Parcel Units:	139 (R-1) + 20 (PUD)
Urban Service Area:	Yes
Development Status:	Vacant
Metro 2020 Designation	Neighborhood

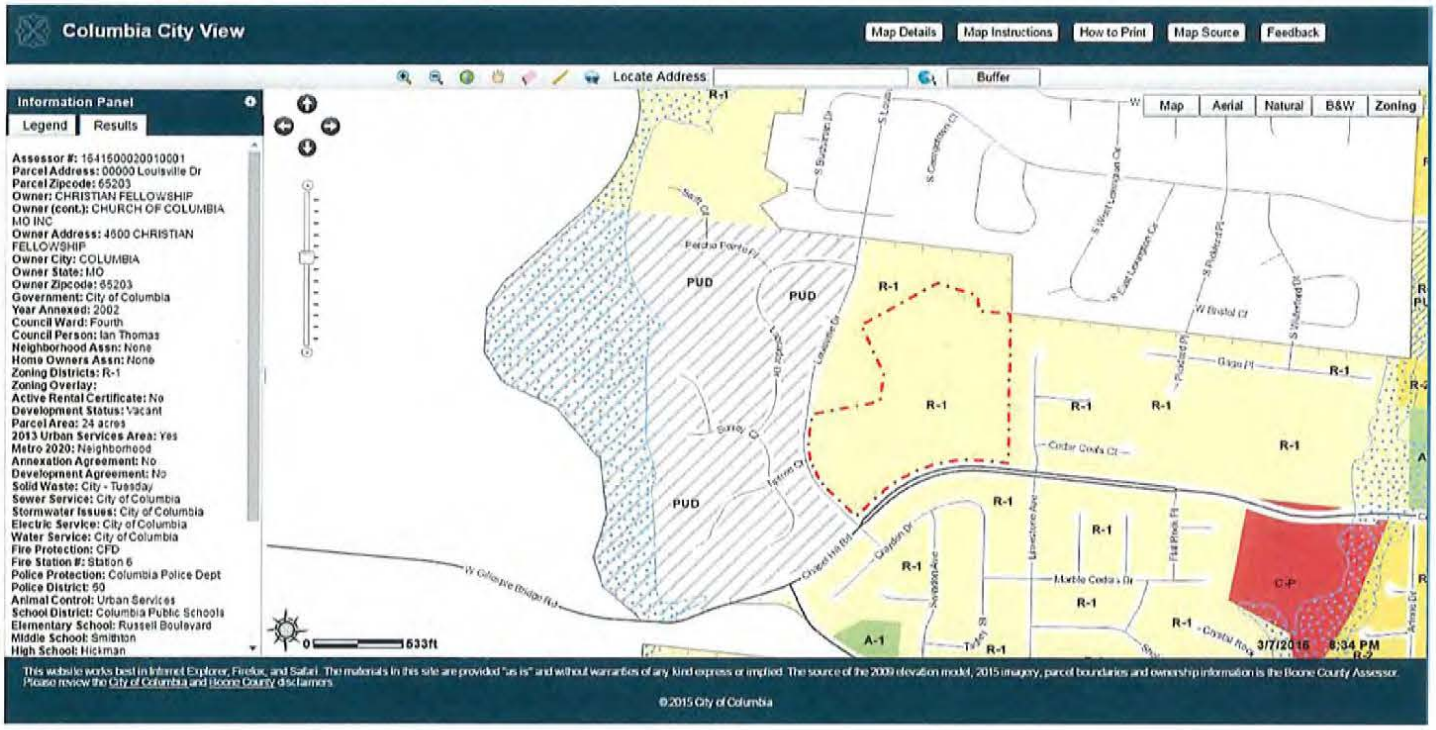


Zoning:	R-3
Name/Description:	Westbury
Parcel Area:	35.2 Acres
Parcel Units:	194
Urban Service Area:	Yes
Development Status:	Vacant
Metro 2020 Designation	Neighborhood

Zoning:	PUD
Name/Description:	Quail Creek
Parcel Area:	2 Acres
Parcel Units:	12
Urban Service Area:	Yes
Development Status:	Vacant
Metro 2020 Designation	Neighborhood



Zoning:	R-1
Name/Description:	Miscellaneous property zoned R-1
Parcel Area:	24 Acres
Parcel Units (approx):	72
Urban Service Area:	Yes
Development Status:	Vacant
Metro 2020 Designation	Neighborhood



Zoning:	A-1
Name/Description:	Miscellaneous properties zoned F-1 but classified as having Neighborhood status.
Parcel Area (approx.):	110 Acres
Parcel Units (approx.):	220
Urban Service Area:	Yes
Development Status:	Vacant
Metro 2020 Designation	Neighborhood

Assessor #: 1820300000020001
Parcel Address: 00000 I 70 Dr Sw
Parcel Zipcode: 65203
Owner: BARTAL ANTHONY E & CAROLYN
Owner (cont.): T
Owner Address: 2040 S MAPLE BLUFF DR
Owner City: COLUMBIA
Owner State: MO
Owner Zipcode: 65203
Government: City of Columbia
Year Annexed: 1969
Council Ward: Second
Council Person: Michael Trapp
Neighborhood Assn: None
Home Owners Assn: None
Zoning Districts: A-1
Zoning Overlay: F-1
Active Rental Certificate: No
Development Status: Vacant
Parcel Area: 2.3 acres
2013 Urban Services Area: Yes
Metro 2020: Neighborhood
Annexation Agreement: No
Development Agreement: No
Solid Waste: City - Monday
Sewer Service: City of Columbia
Stormwater Issues: City of Columbia
Electric Service: City of Columbia
Water Service: City of Columbia
Fire Protection: CPD
Fire Station #: Station 2
Police Protection: Columbia Police Dept
Police District: 10
Animal Control: Urban Services
School District: Columbia Public Schools
Elementary School: Mary Paxton Keeley
Middle School: Smithton
High School: Hickman
Special Business District: No
TDD: No
TIF: No
CID: No
DBR Library Tax: Boone County Library
CDBG Area: No
NRT Area: No
2011 FEMA Panel: 29019C0260D
USGS Quad: Huntsdale
Major Watershed: Perche Creek
Secondary Watershed: Perche Creek
Immediate Watershed: Harmony Creek

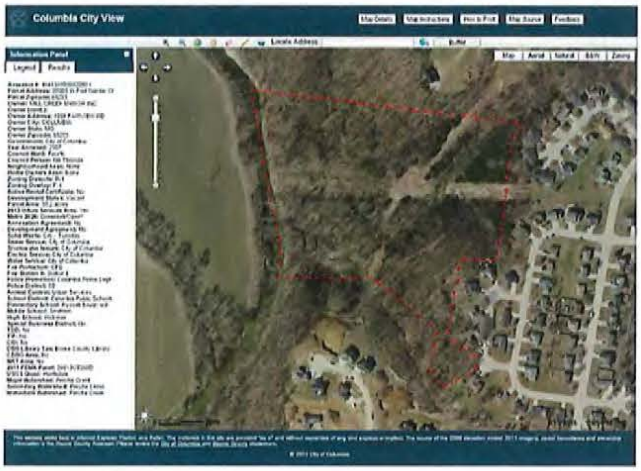
Assessor #: 1820300000030001
Parcel Address: 2516 I-70 Dr Sw
Parcel Zipcode: 65203
Owner: CROWE SONYA TAYLOR
Owner (cont.):
Owner Address: 3516 INTERSTATE 70 DR SW
Owner City: COLUMBIA
Owner State: MO
Owner Zipcode: 65203
Government: City of Columbia
Year Annexed: 1969
Council Ward: Second
Council Person: Michael Trapp
Neighborhood Assn: None
Home Owners Assn: None
Zoning Districts: A-1
Zoning Overlay: F-1
Active Rental Certificate: No
Development Status: Vacant
Parcel Area: 6.9 acres
2013 Urban Services Area: Yes
Metro 2020: Neighborhood
Annexation Agreement: No
Development Agreement: No
Solid Waste: City - Monday
Sewer Service: City of Columbia
Stormwater Issues: City of Columbia
Electric Service: Boone Electric
Water Service: City of Columbia
Fire Protection: CPD
Fire Station #: Station 2
Police Protection: Columbia Police Dept
Police District: 10
Animal Control: Urban Services
School District: Columbia Public Schools
Elementary School: Mary Paxton Keeley
Middle School: Smithton
High School: Hickman
Special Business District: No
TDD: No
TIF: No
CID: No
DBR Library Tax: Boone County Library
CDBG Area: No
NRT Area: No
2011 FEMA Panel: 29019C0260D
USGS Quad: Huntsdale
Major Watershed: Perche Creek
Secondary Watershed: Perche Creek
Immediate Watershed: Harmony Creek

Assessor #: 1820300000040001
Parcel Address: 2606 I-70 Dr Sw
Parcel Zipcode: 65203
Owner: CROWELL HILLIS D & JANE V
Owner (cont.): TRUST
Owner Address: 3605 INTERSTATE 70 DR SW
Owner City: COLUMBIA
Owner State: MO
Owner Zipcode: 65203
Government: City of Columbia
Year Annexed: 1969
Council Ward: Second
Council Person: Michael Trapp
Neighborhood Assn: None
Home Owners Assn: None
Zoning Districts: A-1
Zoning Overlay: F-1
Active Rental Certificate: No
Development Status: Vacant
Parcel Area: 6.9 acres
2013 Urban Services Area: Yes
Metro 2020: Neighborhood
Annexation Agreement: No
Development Agreement: No
Solid Waste: City - Monday
Sewer Service: City of Columbia
Stormwater Issues: City of Columbia
Electric Service: Boone Electric
Water Service: City of Columbia
Fire Protection: CPD
Fire Station #: Station 2
Police Protection: Columbia Police Dept
Police District: 10
Animal Control: Urban Services
School District: Columbia Public Schools
Elementary School: Mary Paxton Keeley
Middle School: Smithton
High School: Hickman
Special Business District: No
TDD: No
TIF: No
CID: No
DBR Library Tax: Boone County Library
CDBG Area: No
NRT Area: No
2011 FEMA Panel: 29019C0260D
USGS Quad: Huntsdale
Major Watershed: Perche Creek
Secondary Watershed: Perche Creek
Immediate Watershed: Harmony Creek

Assessor #: 1820300000010001
Parcel Address: 000001 70 Dr Sw
Parcel Zipcode: 65203
Owner: TKG COLUMBIA SQUARE LLC
Owner (cont.):
Owner Address: 211 N STADIUM BLVD STE 201
Owner City: COLUMBIA
Owner State: MO
Owner Zipcode: 65203
Government: City of Columbia
Year Annexed: 1969
Council Ward: First
Council Person: Clyde Ruffin
Neighborhood Assn: Park DeVille
Home Owners Assn: None
Zoning Districts: A-1
Zoning Overlay: F-1
Active Rental Certificate: No
Development Status: Vacant
Parcel Area: 79.1 acres
2013 Urban Services Area: Yes
Metro 2020: Neighborhood
Annexation Agreement: No
Development Agreement: No
Solid Waste: City - Monday
Sewer Service: City of Columbia
Stormwater Issues: City of Columbia
Electric Service: City of Columbia
Water Service: City of Columbia
Fire Protection: CPD
Fire Station #: Station 2
Police Protection: Columbia Police Dept
Police District: 10
Animal Control: Urban Services
School District: Columbia Public Schools
Elementary School: Mary Paxton Keeley
Middle School: Smithton
High School: Hickman
Special Business District: No
TDD: No
TIF: No
CID: No
DBR Library Tax: Boone County Library
CDBG Area: No
NRT Area: No
2011 FEMA Panel: 29019C0260D
USGS Quad: Huntsdale
Major Watershed: Perche Creek
Secondary Watershed: Perche Creek
Immediate Watershed: Harmony Creek

Assessor #: 1610400000050001
Parcel Address: 00000 N Strawn Rd
Parcel Zipcode: 65203
Owner: CITY OF COLUMBIA
Owner (cont.):
Owner Address:
Owner City:
Owner State:
Owner Zipcode:
Government: City of Columbia
Year Annexed: 2005
Council Ward: Second
Council Person: Michael Trapp
Neighborhood Assn: None
Home Owners Assn: None
Zoning Districts: A-1
Zoning Overlay: F-1
Active Rental Certificate: No
Development Status: Developed
Parcel Area: 100.5 acres
2013 Urban Services Area: Yes
Metro 2020: Neighborhood
Annexation Agreement: No
Development Agreement: No
Solid Waste: City - Monday
Sewer Service: City of Columbia
Stormwater Issues: City of Columbia
Electric Service: City of Columbia
Water Service: City of Columbia
Fire Protection: CPD
Fire Station #: Station 6
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: Hickman
Special Business District: No
TDD: No
TIF: No
CID: No
DBR Library Tax: Boone County Library
CDBG Area: No
NRT Area: No
2011 FEMA Panel: 29019C0260D
USGS Quad: Huntsdale
Major Watershed: Perche Creek
Secondary Watershed: Perche Creek
Immediate Watershed: Perche Creek

Zoning:	R-1
Name/Description:	2 properties (1 adjoining the proposed Breckenridge development to the North and the other is 1 parcel to the South) zoned R-1 but classified as having Greenbelt Open status.
Parcel Area (approx.):	77 Acres
Parcel Units (approx.):	0
Urban Service Area:	Yes
Development Status:	Vacant
Metro 2020 Designation	Greenbelt/Open



The point I am trying to make is that this development does not serve this community. It harms it. We on the Westside of Columbia are full of home units for renters and homeowners. We have PUDs, duplexes, apartments and single families homes all co-existing well and as you see our public services are maxed out. We have many more acres already zoned that will soon yield additional homes, families and needs. As a city that wants smart growth, we need to keep this development South or East.