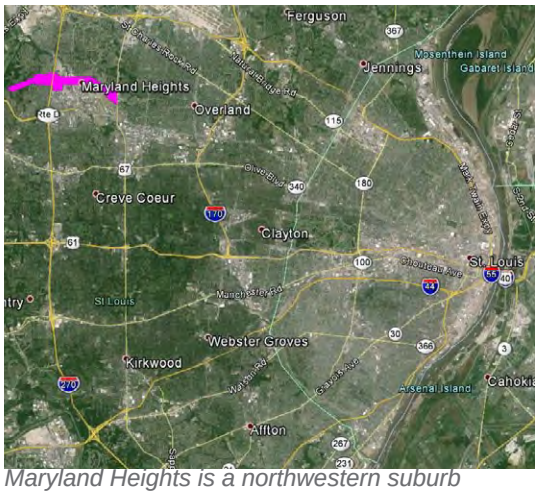
2

EXISTING CONDITIONS ANALYSIS

Historical and Regional Context

Dorsett Road has been central to the story of Maryland Heights since the 1860's when the community began to take shape at what is now the intersection of Dorsett and Fee Fee Roads, around the shop of blacksmith George T. Moke. The settlement continued to grow as it went through a number of name changes until finally settling on Maryland Heights when the land was subdivided by a real estate company in 1914. With the presence of the St. Louis, Kansas City and Colorado Railroad and the addition of an electric trolley line, Maryland Heights became a well-travelled area for commuters going to and from St. Louis. The population of the city grew steadily during the first half of the 20th Century and then, like many other American suburbs, experienced a boom in construction, infrastructure and investment after World War II. Throughout the 1960s and 1970s Maryland Heights was one of the major growth areas for the St. Louis metro region. More recently, competition among regional suburbs for investment has been tough and metropolitan growth has shifted to other parts of the region, most notably, the Chesterfield and Creve Coeur areas of St. Louis County, as well as St. Charles and Jefferson counties and portions of Metro East (Illinois). Investment in a Great Street on Dorsett Road in conjunction with Maryland Heights' location within the St. Louis metro area will position the city to regain its competitive edge to attract investment and revenue in Maryland Heights.

The corridor study area includes the entire length of Dorsett Road from Marine Avenue to Lindbergh Boulevard and surrounding properties approximately one quarter mile to the north and south of the road. This site is strategically located between the northern and central travel corridors of the region. By car, the corridor is eight minutes from Lambert International Airport and only fifteen minutes from St. Louis attractions like the St. Louis Zoo, Science Center, Art Museum and the Missouri History Museum. The Dorsett Road right-of-way is defined and owned by St. Louis County.



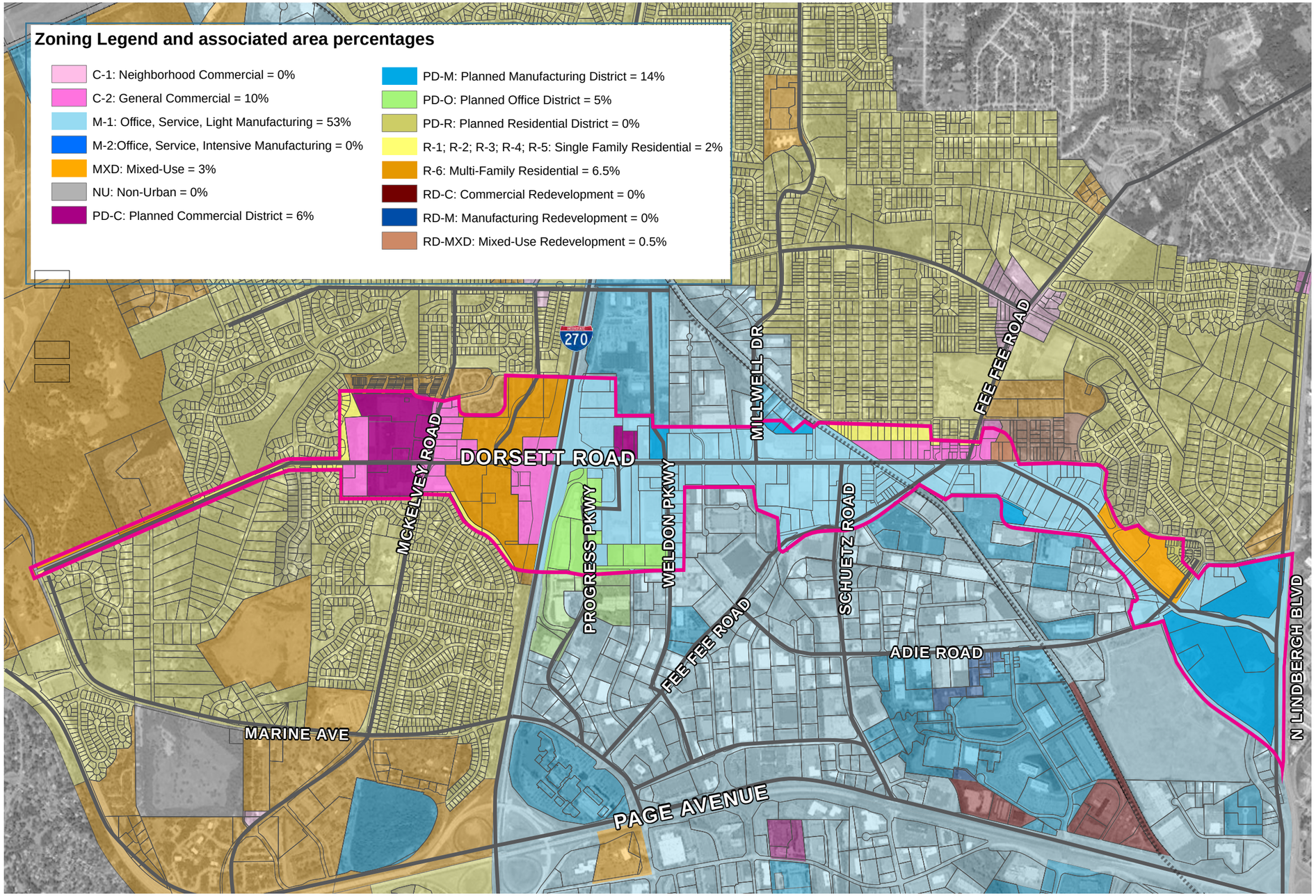
Maryland Heights is a northwestern suburb of St. Louis.

Population

Nine and a half percent of Maryland Heights' 27,499 residents live within the Dorsett Road corridor study area. The city is relatively diverse with 73.2 percent of the population being White, and 26.8 percent composed of African-American, Asian and Hispanic populations. The median age within the corridor is 34 years old, which is slightly younger than the average age for St. Louis County (40 years old). The median income in the corridor is approximately $50,000. This is similar to statistics for Maryland Heights and St. Louis County but is well below other nearby cities in the surrounding region.

Jobs and Housing

Maryland Heights is a jobs-rich community supporting a 5-1 jobs to housing ratio (5 jobs for every household). While this is excellent for employment and income conditions, it creates an unusual balance of corridor activity throughout the day. After working hours, corridor workers choose to leave Dorsett Road and spend their time and money in other locations with better amenities, more housing options and unique destinations. Creating an environment along Dorsett Road that encourages people to stay in the corridor, enjoy Maryland Heights and contribute to businesses and revenue is a guiding principle of this plan.

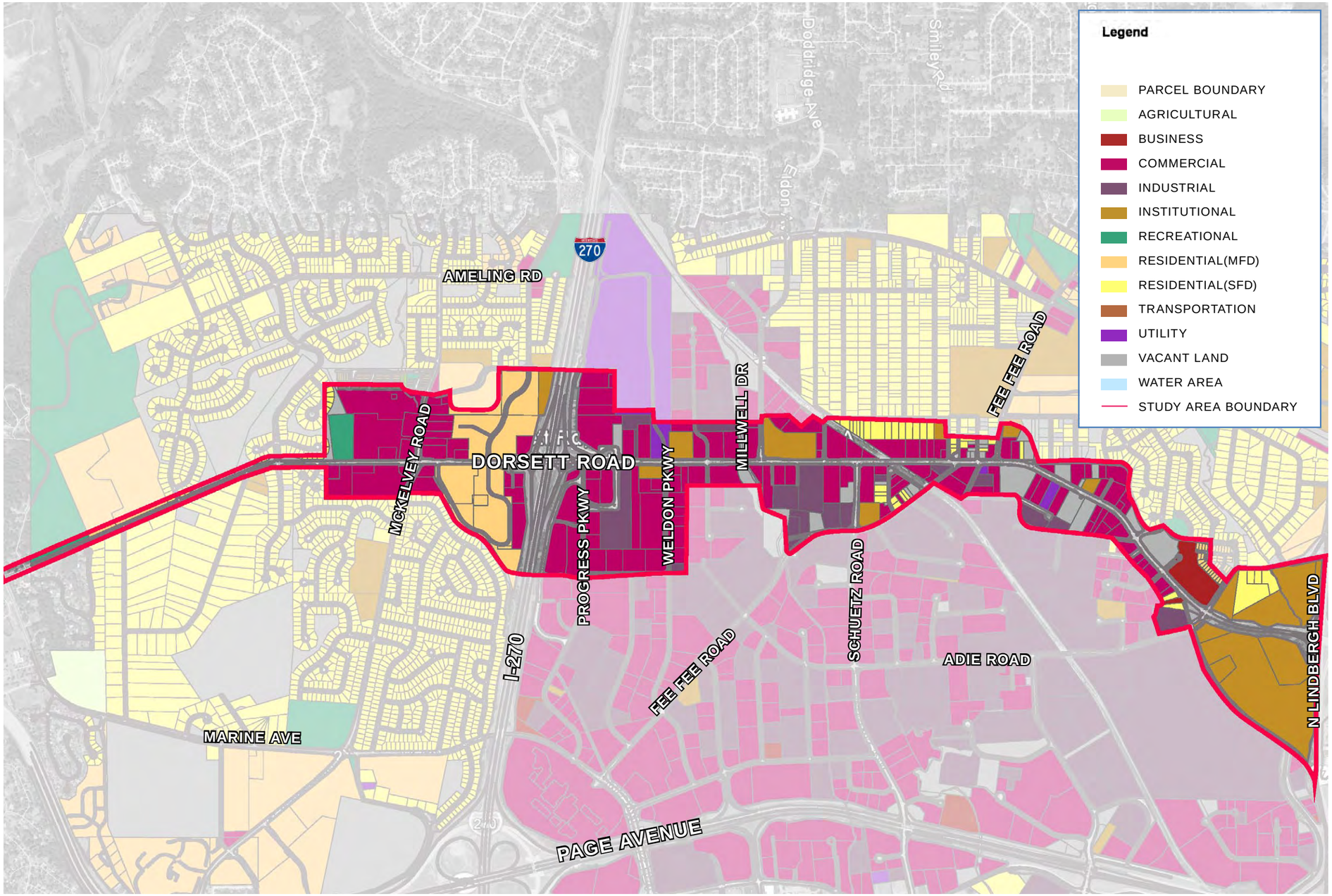


Existing zoning in the Dorsett Road corridor

Land Use and Zoning

This study considers the corridor as split into two major land use and zoning areas by Interstate Highway 270 (I-270). The western third is composed of mainly residential and commercial land uses and is zoned to support this. The eastern portion of the corridor is almost entirely zoned for office, service and light manufacturing (M-1 Zoning). Despite the zoning regulations, there are a number of commercial and retail businesses within this section of the corridor that have obtained a conditional use permit to allow for a business' intended land use to occur in its desired location.

Zoning regulates and controls the types of buildings and land use within the city. Municipal zoning codes can determine how a neighborhood or district is perceived and experienced by residents and visitors in the area, as it determines density of development and provides standards for parking, lighting, landscape, building aesthetics and signage. Because the current zoning conditions east of I-270 are limited to office, service and light manufacturing, the businesses, activities and experiences in this section of the corridor are also limited. Additionally, current zoning conditions confine redevelopment and investment of vacant properties within the corridor to these land uses, possibly reducing the number of potential investors to the area.



Existing land use in the Dorsett Road corridor.

The pattern of current land use in the corridor is not only inconsistent with the zoning but it has created areas with poor aesthetic quality, large swaths of under-utilized surface parking, inconsistent building character and a lack of destinations. These factors stand in the way of unifying the corridor to allow for a sense of place or identity.

Aesthetics

Throughout the public engagement process, community members consistently raised the aesthetic quality of Dorsett Road as a key area of concern. Aesthetic quality is evaluated and discussed using three attributes: visual character, visual quality, and viewer response. Visual character describes the key features of the landscape and how these features relate to one another in terms of scale, diversity and continuity. Currently, the scale of corridor elements does not relate to pedestrians, bicyclists, or drivers, and the diversity of elements does not work cohesively in the corridor to support an attractive environment. There are no continuous features in the corridor that define a character or identity that would allow residents and visitors to recognize the Dorsett Road corridor as a real "place."

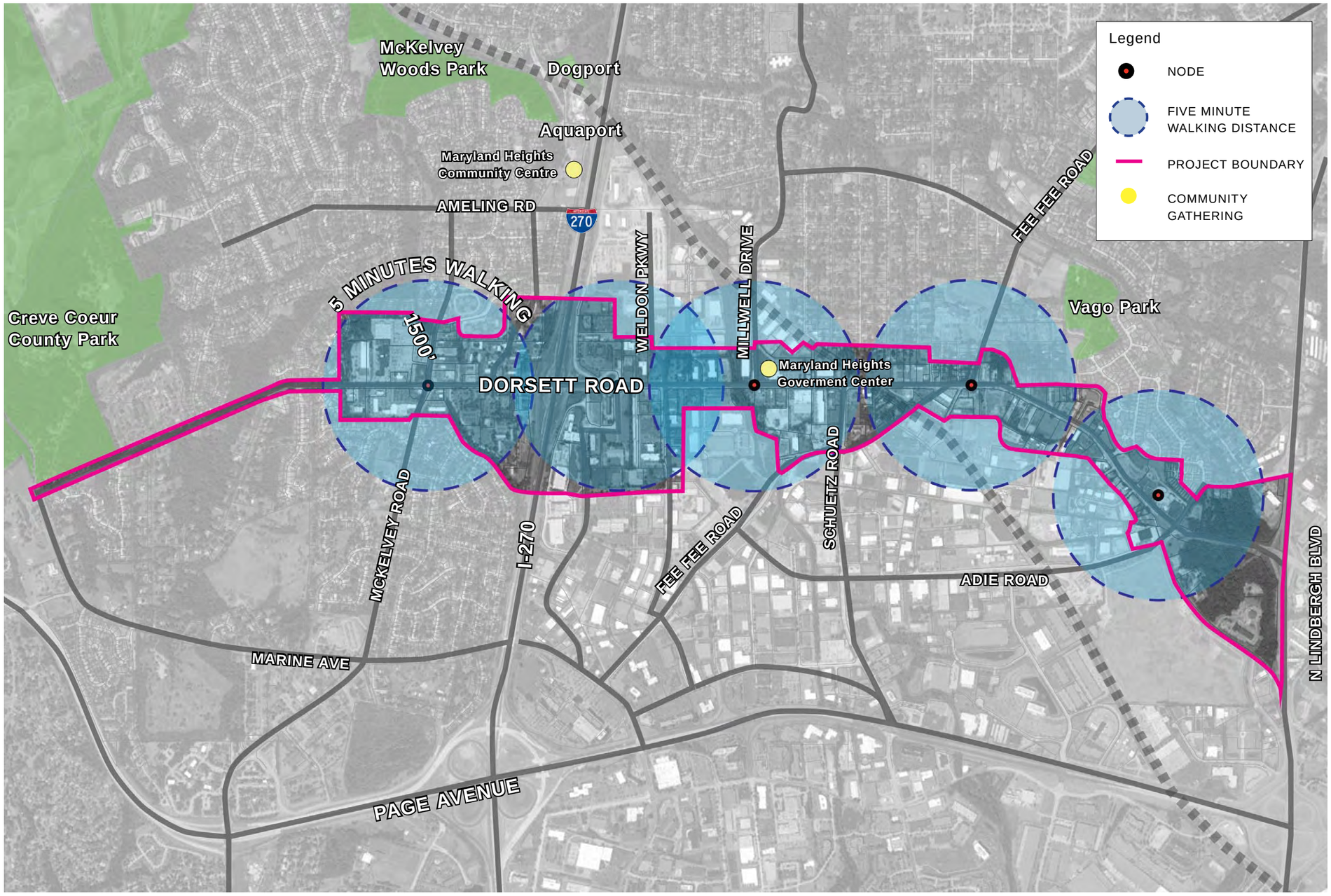
Looking eastbound on Dorsett Road towards McKelvey Road

Visual quality describes the value of the visual experience and poses the question "Is this space ordinary, spectacular, or somewhere in between?" As the main street of Maryland Heights, the current look and character of the corridor does not present an inviting profile of the community. Aging building facades, small, unkempt and cracking sidewalks, and the lack of greenery and overhead utility lines all contribute to the poor visual experience felt by residents and corridor visitors.

The project team polled community members to determine the visual response to three segments of the corridor. In-person and online responses were averaged to conclude that:

- 39 percent of respondents find the appearance of the Dorsett Road corridor near Creve Coeur Park Park to be poor or very poor.
- 63 percent of respondents find the appearance of the Dorsett Road corridor between I-270 and Fee Fee Road to be poor or very poor.
- 32.5 percent of respondents find the appearance of the Dorsett Road corridor between Fee Fee Road and Lindbergh to be poor or very poor.

Small and large improvements to the aesthetic quality of the corridor will contribute to creating a Great Street that engages Dorsett Road visitors and gives them a sense of the place that is Maryland Heights.



Community Assests and Walking Distances

Community Gathering Spaces

Maryland Heights has a number of quality gathering spaces in the city. The Maryland Heights Community Centre, Maryland Heights Government Center, McKelvey Woods Park, Aquaport, Dogport, and Creve Coeur Park all provide great opportunities for residents and visitors to gather in Maryland Heights. Unfortunately, only two of these spaces (Creve Coeur Park and Maryland Heights Government Center) are within a five minute walking distance (.25 miles) of the study area. For the Dorsett Road corridor to become a truly active and engaging area within the city, new amenities for community gathering and social interaction need to be accommodated.

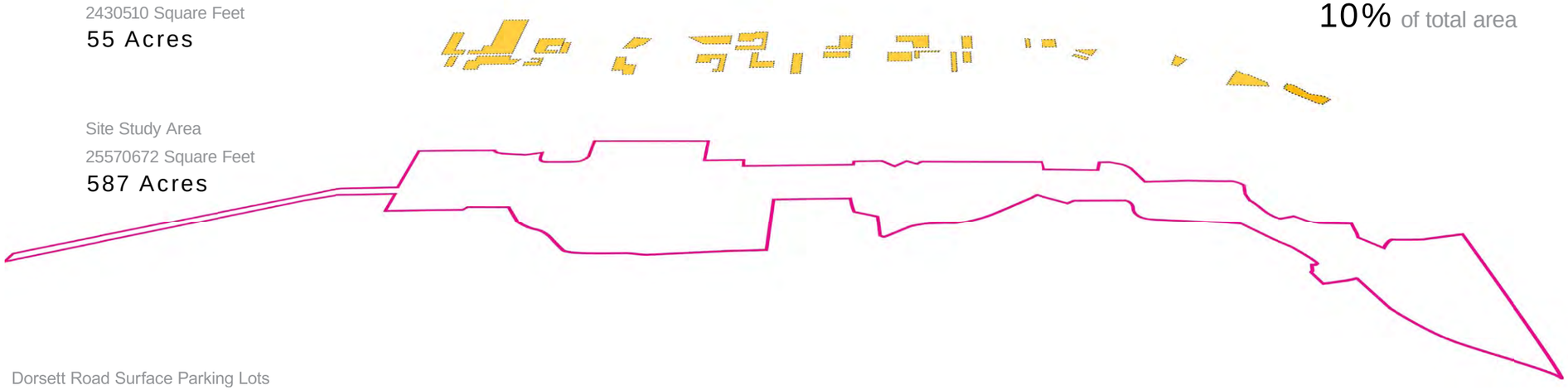
Open Space, Parks and Trails

The corridor's proximity to Creve Coeur Park, Creve Coeur Lake and the Missouri River Greenway is a great asset to the community. In 2013, Phase II of construction began on the McKelvey Woods Trail, a bike trail that will link Aquaport, McKelvey Woods Park, and Creve Coeur Park. These resources attract visitors, bicyclists, and many of the community's residents to enjoy the outdoors in Maryland Heights. While these assets are convenient for surrounding residents living north of the corridor, they are not safely or comfortably accessible by bicycle or by foot, to or from the core of the Dorsett Road corridor.

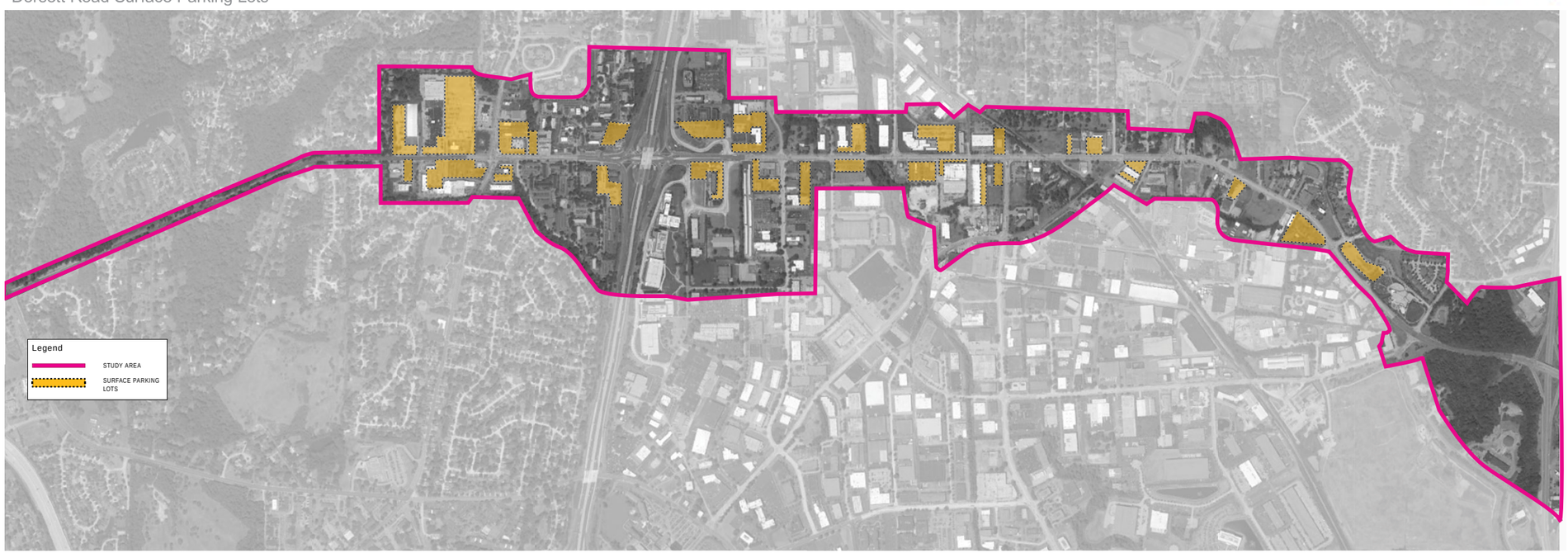
Surface Parking Area
2430510 Square Feet
55 Acres

Site Study Area
25570672 Square Feet
587 Acres

Surface Parking Lots =
10% of total area



Dorsett Road Surface Parking Lots

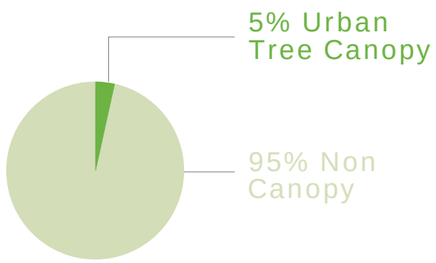


Environmental Integrity

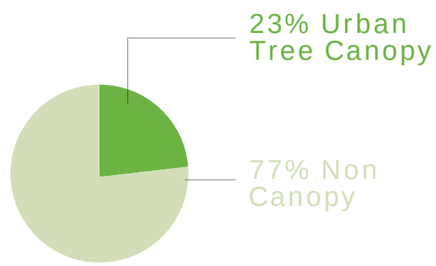
Employing stormwater best management practices, controlling air quality and heat island effects, and integrating native plant species in suburban communities can have significant impacts on regional air and water quality. Improving these conditions and taking advantage of natural systems not only provides environmental benefits to communities, but can also have positive fiscal impacts to residents, businesses and municipalities.

For example, the Dorsett Road corridor is largely composed of impervious surfaces that absorb heat and prevent water from percolating into the ground, inhibiting the natural water cycle. According to the USGS, an impervious, man-made surface will generate two to six times more runoff than a natural surface. Ten percent of the 587 acre study area is dedicated to surface parking alone. These parking lots have been built to channel stormwater into receiving water bodies as quickly as possible via gutters, drains and pipes. As a result, runoff that is contaminated with numerous pollutants, such as oil, petroleum residues, and other contaminants from vehicles, animal feces, sediment, pesticides, heavy metals, and bacteria enters receiving waters at an unnaturally high rate and volume, negatively impacting the surrounding ecosystem on its path to drainage sites and local stormwater facilities. These kinds of parking lots are degrading water quality, straining stormwater management systems, and consuming a significant portion of land and resources in the Dorsett Road corridor. As Maryland Heights looks for ways to improve its environmental integrity, managing the size of surface parking lots represents a great place to start.

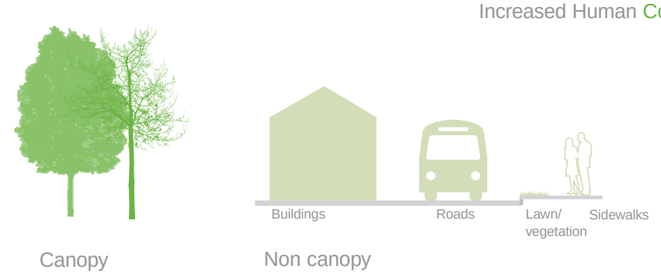
Dorsett Road has 5% of tree canopy cover and 95% of non tree cover.



Dorsett Road study area has 23% of tree canopy cover and 77% of non tree cover.

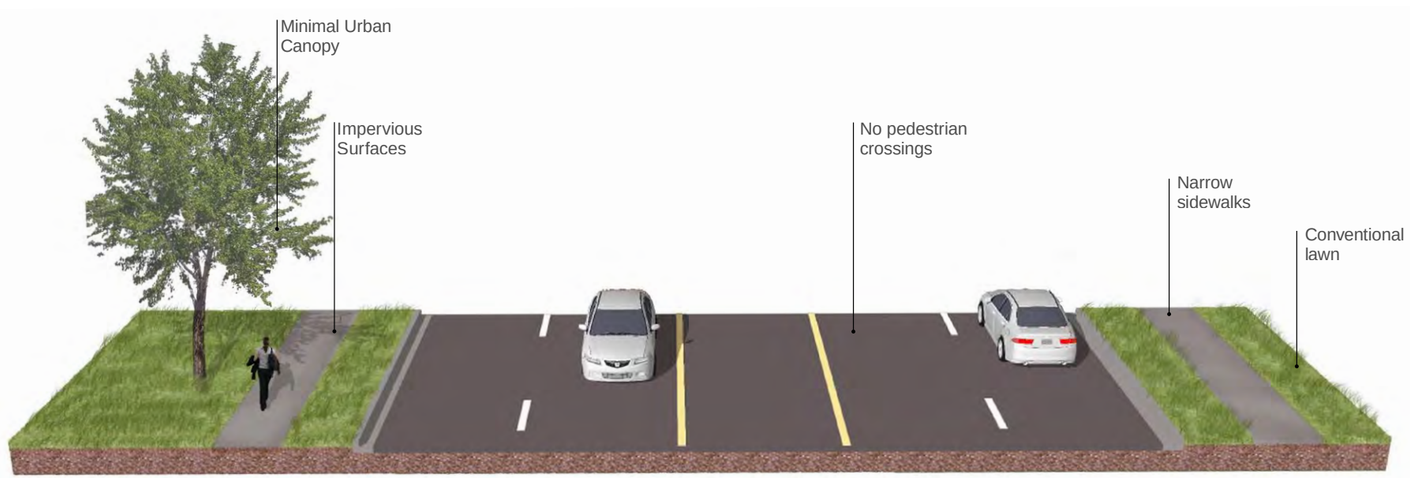


What's being calculated?



Benefits of an Urban Canopy:
Increased Property Value
Cleaner Air
Less Storm Water Runoff
Increased Human Comfort

Typical Dorsett Road urban canopy cover



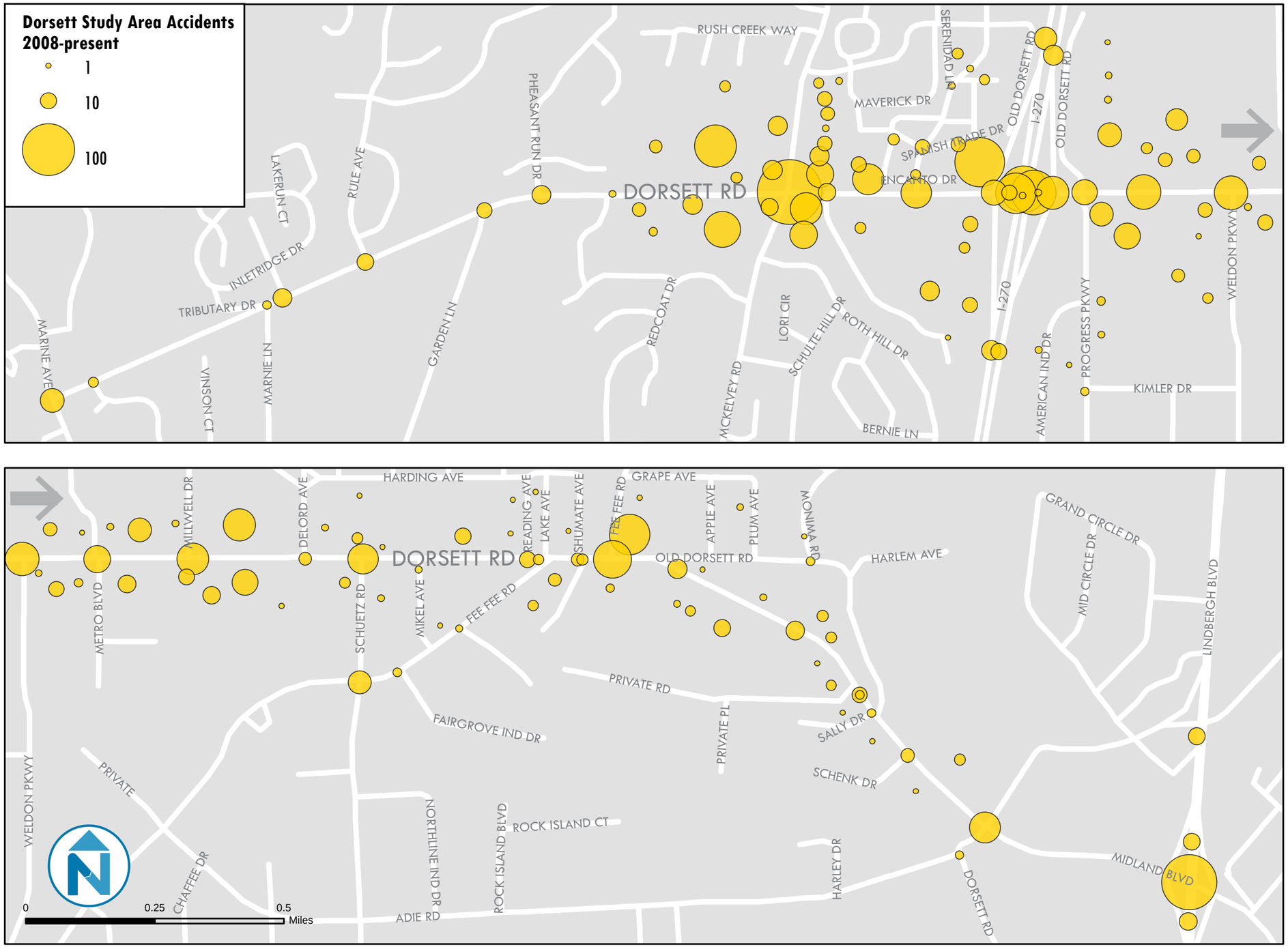
Dorsett Road existing condtions

Canopy Cover

Another major factor that plays a role in aesthetics, environmental integrity, and local economics is the presence, or lack of, urban tree canopy. Within the Dorsett Road right-of-way only 5 percent of the study area has any kind of canopy cover. Canopy coverage in the entire corridor is 23 percent; however, this number is heavily skewed by the inclusion of the large wooded area at the eastern end of the corridor. The Davey Resource Group recommends minimum canopy coverage of 15 percent of all land area in business districts. The United States Forest Service recommends canopy coverage of 30 percent for urban areas. There has been extensive research conducted across the country on the many benefits that a healthy urban tree canopy can bring to urban environments. Some of these benefits include:

- Moderated air temperatures
- Increased oxygen levels
- Interception and capture of particulate matter air pollution and absorption of gaseous pollutants
- Noise level reduction
- Increased property values
- Reduced building energy use and associated costs
- Positive public perception
- Consumer willingness to spend more

Strategic tree planting in the corridor outlined in this master plan will help the corridor and the City of Maryland Heights create the conditions for a Great Street.



Transportation Trends

The predominant mode of travel to, from, and through the corridor is the automobile. Nearly 90 percent of residents living in Maryland Heights drive to work, 6.5 percent carpool, nearly two percent walk, and less than one percent take public transit. The travel patterns of those working in Maryland Heights are very similar with nearly 90 percent driving alone, 8.6 percent carpooling, and one percent using public transportation. The average travel time of these workers is 28 minutes, with workers who drive alone traveling slightly less time and workers traveling by bus traveling for significantly longer (66 minutes, on average).

Collisions

Automobile collisions are concentrated where traffic volumes are highest, especially between McKelvey Road and Metro Boulevard. While data indicating the types of accidents are not available, since 2008, there have been almost 2,200 accidents along Dorsett Road between Marine Drive and Lindbergh Boulevard, according to data supplied by the City of Maryland Heights. In the past five years the I-270 and Dorsett Road interchange has witnessed more than 500 crashes, followed by the intersection of McKelvey Road and Dorsett Road with 155 accidents.

Location along Dorsett Road	ADT (2007)	PM Peak Hour Traffic Volume (2008)	
	Vehicles	Vehicles	Pedestrians
Marine Drive to McKelvey Road	14,675	3,346	20
McKelvey Road to Metro Boulevard	38,105	1,942	1
Metro Boulevard to Fee Fee Road	29,130	2,253	0
Fee Fee Road to Adie Road	21,970	1,889	1
Adie Road to Lindbergh Boulevard	21,950	2,328	0

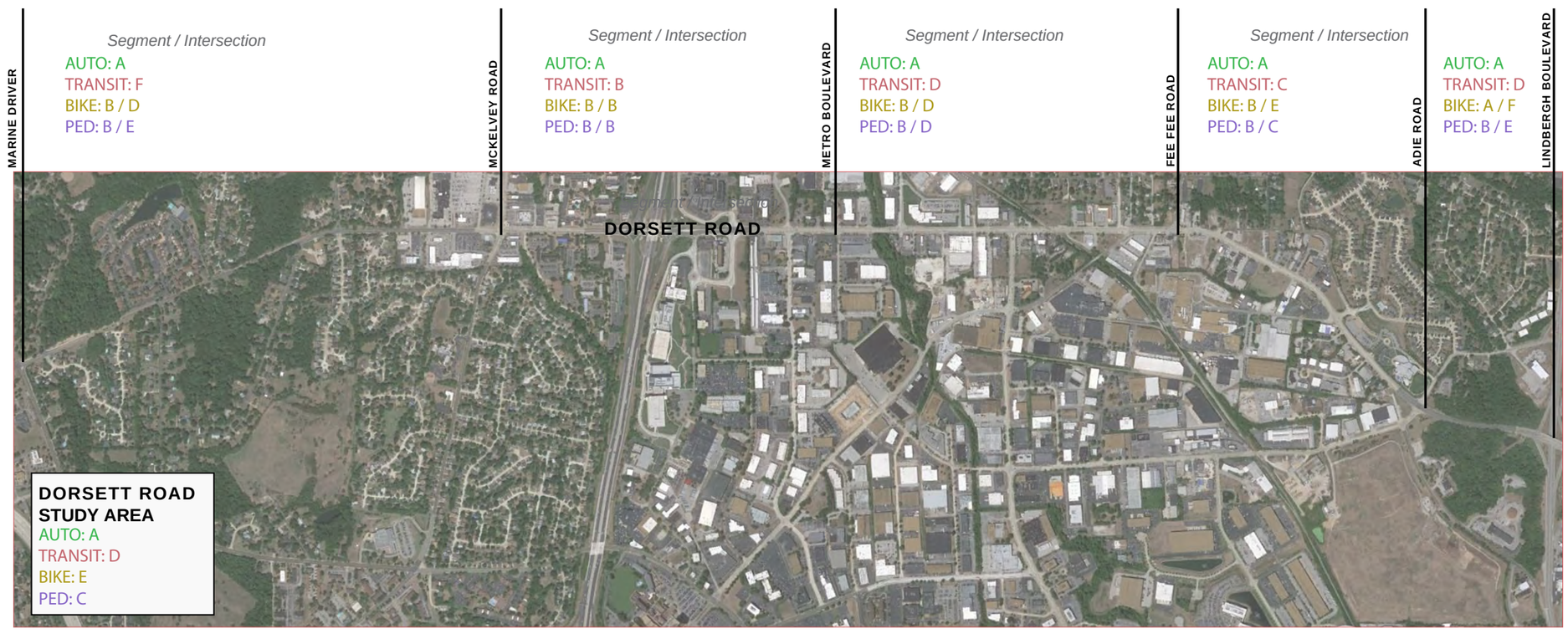
Source: St. Louis County

Level of Service

Level of Service (LOS) is traditionally a term used to indicate the quality of service provided by a facility under a certain set of operating conditions including speed, travel time, traffic interruptions, freedom to maneuver, safety, travel comfort and convenience, and operating costs. Six Vehicular LOS levels, represented by letters A through F, indicate the average delay experienced by drivers traveling through an intersection. A represents the best operating conditions and F the worst. Recently, cities have been recognizing the importance of pedestrian, bicycle, and transit rider experience to the economies and environments of their streets.

The most recent Highway Capacity Manual (HCM) has incorporated these notions into recent studies that evaluate multimodal levels of service (MMLOS). To evaluate the interactions among transportion modes, the project team evaluated MMLOS across the corridor. The MMLOS model estimates the perceptions of car drivers, bus riders, bicyclists, and pedestrians concerning the quality of service and roadway environment together to show how these modes interact. This allows people to understand how changes in the quality of service of one mode can positively or negatively influence the quality of service of the other modes.

The MMLOS model computes a single average level of service for each of the four modes, not one single, combined score. The scores for street segments and intersections are "A-F," using the standard levels established in the HCM, where "A" is free flowing traffic operations and "F" is completely congested. The MMLOS score for each mode is the average degree of satisfaction with the street and intersection (for bicyclists and pedestrians). MMLOS is most revealing when used to compare the multimodal impacts of various street improvements.
This chapter summarizes existing MMLOS by mode. A complete review of the MMLOS model's strengths and weaknesses, data inputs, methodology, and comprehensive results can be found in Appendix B. Data for this analysis was provided by St. Louis Metro Transit, St. Louis County, and field observations.



Auto Level of Service

Dorsett Road ranges from a two lane, tree-lined road without curbs and gutters on the western end of the corridor to a five lane suburban arterial on the eastern end. The posted speed limit across the entire corridor is 35 miles per hour, but the existing traffic volumes, or traffic flows, vary greatly down the 3.8 mile road. Traffic volumes are highest between McKelvey Road and Metro Boulevard. Within this segment, I-270 bridges Dorsett Road with a six lane, diverging diamond interchange funneling traffic to and from Dorsett Road.

Using the MMLOS approach, Dorsett Road serves auto drivers well. Based on traffic volumes, vehicle speed and delay, signal timing, and existing roadway characteristics and capacity, automobile level of service across the corridor is consistently very good. Even during the PM peak hour, traffic flows slightly below the posted speed limit with few delays and no prolonged "stop-and-go" congestion.

* To track the progress of this project, it will be essential that the City begin to acquire detailed traffic analysis and accident (including accident type) data on an annual basis.

Auto Level of Service

A

Free-flow operations. Traffic flows at or above the posted speed limit and all motorists have complete mobility between lanes. The average spacing between vehicles is about 550 ft(167m) or 27 car lengths. Motorist have a high level of physical and psychological comfort. The effects of incidents or point breakdowns are easily absorbed. An example of LOS A occurs late at night in urban areas, frequently in rural areas, and generally in car advertisements.

B

Reasonable free-flow operations. Free-flow (LOS A) speeds are maintained, maneuverability within the traffic stream is slightly restricted. The lowest average vehicle spacing is about 330 ft(100m) or 16 car lengths. Motorist still have a high level of physical and psychological comfort.

C

At or near free-flow operations. Ability to maneuver through lanes is noticeably restricted and lane changes require more driver awareness. Minimum vehicle spacing is about 220 ft(67m) or 11 car lengths. At LOS C most experienced drivers are comfortable, roads remain safely below but efficiently close to capacity, and posted speed is maintained. Minor incidents may still have no effect but localized service will have noticeable effects and traffic delays will form behind the incident. This is the targeted LOS for some urban and most rural highways.

D

Decreasing free-flow levels. Speeds slightly decrease as the traffic volume slightly increase. Freedom to maneuver within the traffic stream is much more limited and driver comfort levels decrease. Vehicles are spaced about 160 ft(50m) or 8 car lengths. Minor incidents are expected to create delays. Example of LOS D is perhaps the level of service of a busy shopping corridor in the middle of a weekday, or a functional urban highway during commuting hours. It is a common goal for urban streets during peak hours, as attaining LOS C would require a prohibitive cost and societal impact in bypass roads and lane additions.

E

Decreasing free-flow levels. Speeds slightly decrease as the traffic volume slightly increase. Freedom to maneuver within the traffic stream is much more limited and driver comfort levels decrease. Vehicles are spaced about 160 ft(50m) or 8 car lengths. Minor incidents are expected to create delays. Example of LOS D is perhaps the level of service of a busy shopping corridor in the middle of a weekday, or a functional urban highway during commuting hours. It is a common goal for urban streets during peak hours, as attaining LOS C would require a prohibitive cost and societal impact in bypass roads and lane additions.

F

Breakdown in vehicular flow. Flow is forced; every vehicle moves in lockstep with the vehicle in front of it, with frequent slowing required. Technically, a road in a constant traffic jam would be at LOS F. This is because LOS does not describe an instant state, but rather an average or typical service. For example, a highway might operate at LOS D for the AM peak hour, but have traffic consistent with LOS C some days, LOS E or F others, and come to a halt once every few weeks. However, LOS F describes a road for which the travel time cannot be predicted. Facilities operating at LOS F generally have more demand than capacity.

Transit Level of Service

A

- Frequent service, passengers do not need schedules
- Night or “owl” service is provided
- Virtually all major origins and destinations are served

B

- Frequent service but passengers consult schedules
- Late evening service provided
- Most major origins and destinations are served

C

- Maximum desirable time to wait if bus/train is missed
- Early evening service provided
- About 3/4 of higher-density areas provided

D

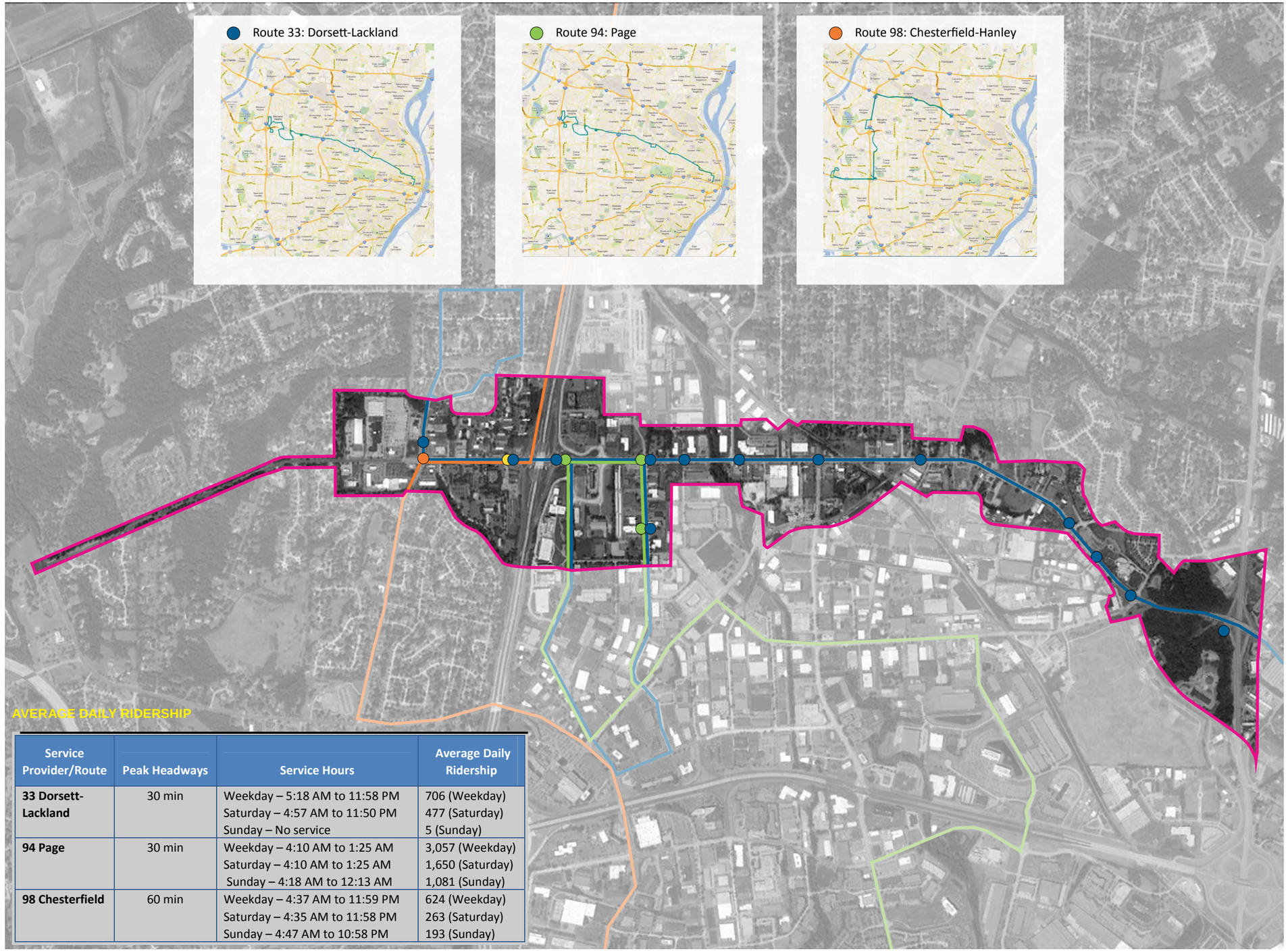
- Service unattractive to choice riders
- Only daytime service provided
- About 2/3 of higher-density areas served

E

- Service available during the hour
- Peak hour service only or limited midday service
- At least 1/2 of the higher-density areas served

F

- Service unattractive to all riders
- Very limited or no service
- Less than 1/2 of higher-density areas served



AVERAGE DAILY RIDERSHIP

Service Provider/Route	Peak Headways	Service Hours	Average Daily Ridership
33 Dorsett-Lackland	30 min	Weekday – 5:18 AM to 11:58 PM Saturday – 4:57 AM to 11:50 PM Sunday – No service	706 (Weekday) 477 (Saturday) 5 (Sunday)
94 Page	30 min	Weekday – 4:10 AM to 1:25 AM Saturday – 4:10 AM to 1:25 AM Sunday – 4:18 AM to 12:13 AM	3,057 (Weekday) 1,650 (Saturday) 1,081 (Sunday)
98 Chesterfield	60 min	Weekday – 4:37 AM to 11:59 PM Saturday – 4:35 AM to 11:58 PM Sunday – 4:47 AM to 10:58 PM	624 (Weekday) 263 (Saturday) 193 (Sunday)

Transit Level of Service

Metro Transit provides transit service in the St. Louis metro area, including Maryland Heights. Four bus routes traverse or use Dorsett Road; however, none of these serve the entirety of the corridor. Route 33 operates along the corridor east of McKelvey Road. The remaining two routes, 94 and 98, operate along Dorsett Road for a few blocks east or west of I-270. In general, transit stops throughout the corridor are identified with signage, but lack protected shelters and other facilities. Some mid-block transit stops lack crosswalks, complicating pedestrian access to the bus stop.

While Metro currently has no planned bus transit service improvements within the study area, Metro's Long Range Transportation Plan envisions light rail connecting Maryland Heights and downtown St. Louis, along the Rock Island Railroad right-of-way and Terminal Railroad Association tracks. The line is proposed to terminate at Westport Plaza, one mile south of Dorsett Road. Presumably bus service between Dorsett Road and Westport would be increased.

To evaluate transit service along the corridor, transit LOS reflects the availability of transit, along with the comfort and convenience of the service provided to passengers. Variables impacting the former include service characteristics, such as, the number of routes and stops along the corridor, transit frequency, vehicle overcrowding, and schedule speed. Variables affecting the passenger experience captured in the transit LOS model include transit on-time performance, passenger wait time, vehicle overcrowding, the quality of the bus stops, and pedestrian LOS.

Transit level of service is very poor along Dorsett Road. Route 33 operates within four of the five segments modeled, but even for this route, bus stops lack shelters and other facilities, and buses operate on 30 minute headways. Because no transit operates between Marine Drive and McKelvey Road, transit LOS for this segment is rated F. Only the segment between McKelvey Road and Metro Boulevard has more robust transit service, as reflected by a rating of B in the transit LOS model.

Pedestrian Level of Service

The Maryland Heights Comprehensive Plan (updated in 2011) Open Space, Parks & Recreation Element identifies Dorsett Road as a major barrier to pedestrian circulation; however, the pedestrian environment within the study area varies greatly upon location, landscape, built form, and the density of driveways. Continuous sidewalks are present along both sides of Dorsett Road throughout most of the corridor. On the west end of the corridor between Marine Drive and Pheasant Run Drive, sidewalks alternate between the north side and the south side of Dorsett Road, with no designated and/or protected crossings at intersections. Nevertheless, this segment of the corridor is lined with dense street trees and lower traffic volumes. Sidewalks are not present between Adie Road and Lindbergh Boulevard, the eastern boundary of the study area. The area between McKelvey and I-270 presents a number of pedestrian problems. Jay-walking is a common practice in this area as people come and go from the apartments surrounding McKelvey Hill Drive to bus stops, employment centers and local retail.

In the central section of the corridor, there are generally sidewalks along both sides of the street, most of which are a standard five foot width. Due to the number of driveways and intersections in this section, the sidewalk tends to be interrupted frequently. Sidewalks generally immediately front the roadway, with no buffer between pedestrians and automobiles.

Fully designated (marked on all four legs of an intersection) crossings of Dorsett Road are restricted to 4 of the 11 signalized intersections, most of which have standard parallel crosswalks, with no high-visibility markings, center medians or pedestrian refuges. Major intersections (including at McKelvey Road, I-270, Weldon Parkway, Fee Fee Road, Adie Road, and Lindbergh Boulevard) all include channelized turn lanes where people have to cross free-flow traffic. Pedestrian amenities, including benches, street trees, pedestrian scale lighting, and transit shelters are absent in the bulk of the corridor, reducing the comfort level for pedestrians.

On the other hand, streets south of Dorsett Road surrounding the Edward Jones campus feature many of the qualities that make streets attractive for pedestrians. These shared streets lack sidewalks, but low traffic speeds and few vehicles, narrow roadway width, and mature street trees make these streets relatively walkable.

Progress Parkway provides a relatively friendly environment for pedestrians.

Pedestrian Level of Service

A

These roadways are highly pedestrian oriented and will tend to attract pedestrian trips. The roadways will be characterized by ample sidewalk space, pedestrian-friendly intersection designs, low-speed or low-volume motor-vehicle traffic, and plentiful amenities (e.g., shade, benches, and so forth). The roadway and sidewalk features will be designed at human scale for maximum pedestrian comfort. Roadways with this level of pedestrian accommodation may be expected in central-city, tourist, and college campus locations. Pedestrians can anticipate a low level of interaction with motor vehicles.

B

These roadways provide many pedestrian safety and comfort features that can attract pedestrian trips. These roadways will have many of the characteristics of an LOS A pedestrian facility, but there may be somewhat fewer amenities or pedestrian-friendly design elements. Pedestrians can anticipate a low to moderate level of interaction with motor vehicles.

C

These roadways are adequate for pedestrian use, but may not necessarily attract pedestrian trips. These roadways will provide a standard sidewalk, but will likely have some deficiencies in maintenance or intersection design, may be located on roadways with high-speed, high-volume motor-vehicle traffic, or may provide a sidewalk on one side of the street only. Pedestrians can anticipate moderate interaction with motor vehicles on these roadways.

D

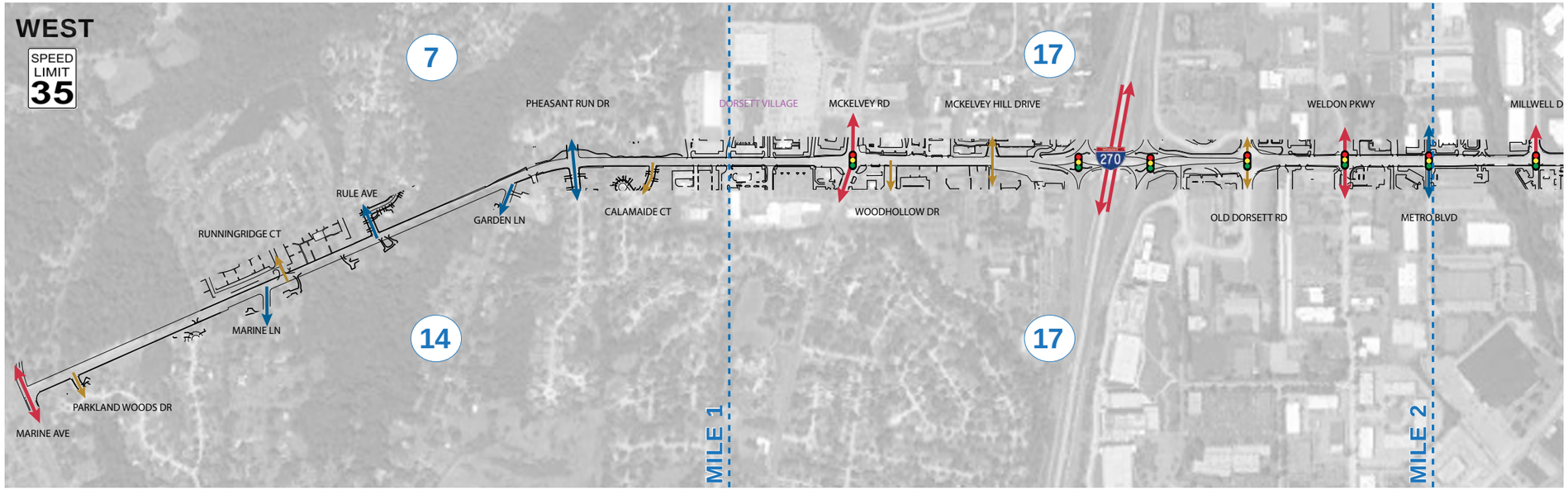
These roadways are adequate for pedestrian use, but will not attract pedestrian trips. These roadways will have more frequent deficiencies in pedestrian safety and comfort features and are more likely to violate ADA requirements for width and clearance. Gaps in the sidewalk system may occur within this roadway corridor. Intersection crossings are likely to be more frequent and more difficult. Pedestrians can anticipate moderate to high levels of interaction with motor vehicles.

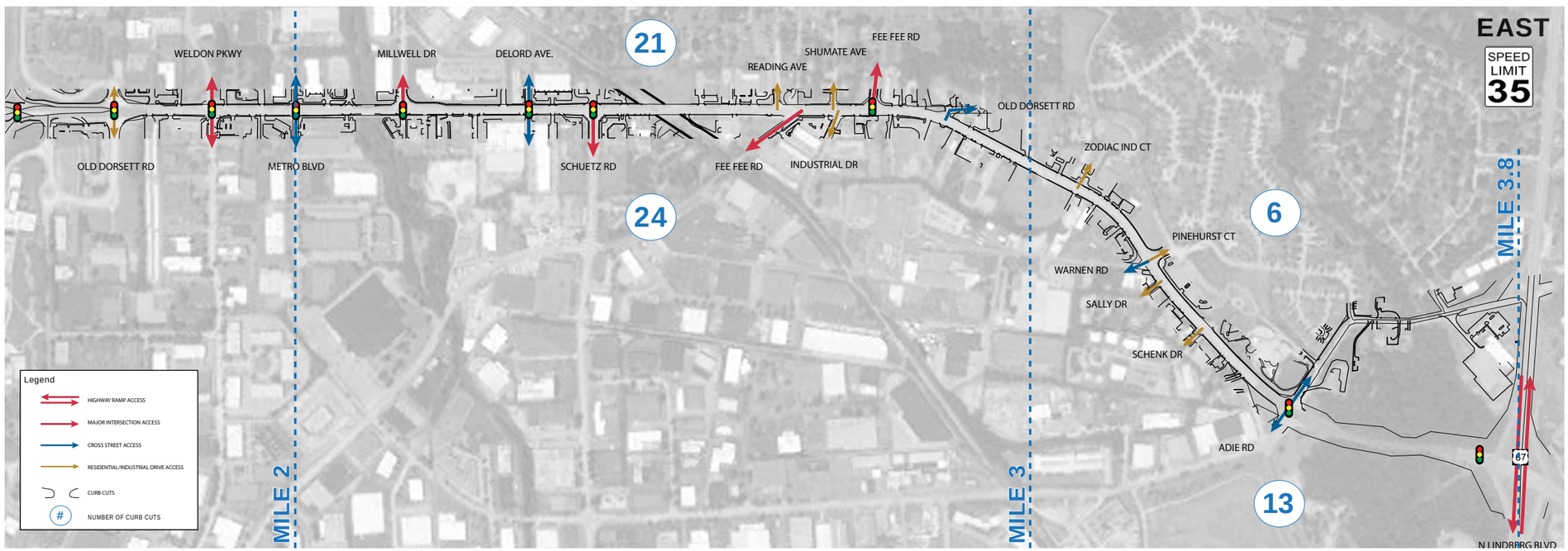
E

These roadways are inadequate for pedestrian use. These roadways may or may not provide a pedestrian facility. Even where a sidewalk is provided these roadways will not meet ADA requirements and will have frequent deficiencies in sidewalk width, clearance, continuity, and intersection design. Roadways in this category that do not provide a pedestrian facility may be characterized as urban fringe, rural section roadways with moderate motor-vehicle traffic. Pedestrians can anticipate a high level of interaction with motor vehicles.

F

These roadways are inadequate for pedestrian use. These roadways do not provide any continuous pedestrian facilities and are characterized by high levels of motor-vehicle use and automobile-oriented development. These roadways are designed primarily for high-volume motor-vehicle traffic with frequent turning conflicts and high speeds.





Number of existing curb cuts per mile along the Dorsett Road corridor

Pedestrian level of service includes measures of delay and sidewalk capacity, as well as non-traditional quality of service metrics that reflect perceptions of comfort and safety. Quality of service incorporates automobile traffic volumes, traffic speeds, lane width, number of travel lanes, and the quality and type of buffer between the sidewalk and automobile travel lanes. The MMLOS model generates two outputs to gauge conditions walking along the corridor and crossing the street: segment level of service and intersection level of service, respectively. In general, variables that increase pedestrian perceptions of comfort and safety (buffers, sidewalk width, and crosswalks) increase the pedestrian LOS score, while high vehicle speeds and volumes, long pedestrian wait times at intersections, and greater roadway width decrease the pedestrian LOS score.

Number and locations of existing cross walks along Dorsett Road

Segment LOS remains consistent along the corridor, while intersection LOS varies markedly. The MMLOS model generated a relatively high ranking for pedestrian segment LOS B throughout, likely the result of no pedestrian congestion, relatively low traffic speeds (32-34 mph), and the presence of a sidewalk throughout most of the corridor. Intersection LOS varies dramatically across the corridor depending on the cross street speed and average pedestrian wait times at signals. In addition, roadway attributes and vehicle circulation patterns which increase the potential for motor vehicle / pedestrian conflicts, including vehicle turning volumes at intersections and the number of right turn channel islands also reduces intersection LOS.

Bicycle Level of Service

Cyclists are few and far between on Dorsett Road, due to, among other things, the absence of on- and off-street cycling facilities, the volume of motor vehicles at key points, numerous driveways, relatively wide lane widths, and the diverging diamond freeway interchange at I-270. A shared-use path at Creve Coeur Park provides 7.7 miles of paved path around Creve Coeur Lake, connects to a bike path parallel to Page Avenue (Hwy 364), and leads to the Katy Trail across the Missouri River. There is no immediate connection between this path and Dorsett Road, although one can ride via the road to the Creve Coeur Lake Upper Ball Field.

The St. Louis Gateway Bike Plan (2011) sets forth a vision for the St. Louis metropolitan region that will support and encourage bicycling as a viable mode of transportation. The document provides design guidelines for on- and off-street bicycle lanes to create conditions where all levels of bicycle riders will have a safe and comfortable biking option. This Plan recommends a shared-use path along Dorsett Road between Marine Drive and McKelvey Road connecting the Creve Coeur Park shared-use path with Dorsett Village. The Gateway Bike Plan also identifies existing wide outside lanes that may be appropriate for shared bike use along Dorsett east of Schuetz Road to Lindbergh Boulevard. The project team disagrees with the inclusion of wide outside lanes along the 5-lane section of Dorsett Road, as it would do little to encourage additional cycling along the corridor.

Like pedestrian LOS, bicycle level of service reflects bicyclists' experience—specifically their perceived comfort and exposure to traffic—at signalized intersections (intersection LOS) and on-street segments between signalized intersections (Segment LOS). Factors contributing adversely to bicycle segment LOS include high traffic volumes and speeds; a greater proportion of trucks and buses; the presence of on-street parking; and many curb cuts, unsignalized intersections, and vehicle through lanes within the segment. Striped bicycle lanes and roadway shoulders add to the perceived sense of traffic separation and improve bicycle segment LOS. High quality pavement also improves bicycle segment LOS. Determinates of intersection LOS include long intersection crossing distances, vehicular right turn channels, traffic signal phasing, and cross street traffic speed and volume.

A bicyclist riding east on Dorsett Road

Along Dorsett Road, bicycle LOS is currently poor at intersections and relatively better within segments, similar to pedestrian LOS. Segment LOS is fairly good due to traffic speeds, good pavement ratings, and lack of on-street parking. The shoulder width between Adie Road and Lindbergh Road bumps this segment LOS score to A. However, the overall study area LOS score is an E.

Bicycle Level of Service

A

These roadways are generally safe and attractive to all bicyclists. Unsupervised child riders should be anticipated because they will typically feel comfortable on these facilities. Bicyclists can anticipate a low level of interaction with motor vehicles. These roadways will provide both on- and off-street bicycle facilities.

B

These roadways are adequate for all bicyclists. Unsupervised child riders should be anticipated because they will typically feel comfortable on these facilities. Bicyclists can anticipate a low level of interaction with motor vehicles. These roadways may have either on- or off-street facilities. However, those without on-street facilities will have characteristics that dictate a low level of interaction with motor vehicles in the roadway, such as low-speed, low-volume motor-vehicle traffic, infrequent conflicts, and good surface conditions.

C

These roadways are adequate for most bicyclists. Bicyclists can anticipate a moderate level of interaction with motor vehicles. These roadways will typically have an on-street facility (bicycle lane or wide curb lane) dedicated for bicyclists. The roadway will generally be characterized by a combination of low-speed, low-volume motor-vehicle traffic, infrequent conflicts, and good surface conditions, although minor deficiencies in two or more of these areas will be present. An off-street bicycle facility may be present along this corridor when on-street conditions are less bicycle friendly.

D

These roadways are adequate for highly experienced riders. Bicyclists can anticipate a moderate to high level of interaction with motor vehicles. These roadways may or may not provide an on-street bicycle facility. When a bicycle facility is provided on an LOS D roadway its characteristics of high-volume, high-speed motor-vehicle traffic and frequent conflicts will make this roadway inadequate for most moderate and beginner riders. An off-street bicycle facility may be present along this corridor when on-street conditions are less bicycle friendly.

E

These roadways require cautious use by highly experienced riders. Bicyclists can anticipate a high level of interaction with motor vehicles. These roadways may or may not provide an on-street bicycle facility. When a bicycle facility is provided on this roadway its characteristics of high-volume, high-speed motor-vehicle traffic and frequent conflicts will make this roadway highly inadequate for moderate-level riders. An off-street bicycle facility may be present along this corridor when on-street conditions are less bicycle friendly.

F

These roadways do not provide any bicycle facilities. Due to the high level of motor-vehicle use and automobile-oriented development on these roadways bicyclists are greatly discouraged or even put at risk when using these roadways.

Refer to Appendix C to see how Bicycle LOS was incorporated into the MMLOS analysis.

Transportation Issues

Various issues and opportunities exist along the corridor in terms of existing transportation conditions. The issues predominately arise from the prevalence of the corridor's general orientation towards the automobile. These issues include the following:

Auto-oriented nature of the corridor

- Current mode splits show that the automobile is by and large the most popular form of travel to, from, and through the corridor.
- Current right-of-way allocation prioritizes space for the automobile, with over 85 percent dedicated to automobile travel ways.
- Pedestrian facilities are often subpar, especially at transit stops.
- No major bicycle infrastructure or amenities are present along the corridor.
- Transit service traversing most of the corridor operates every 30 minutes; no line serves the western end of the corridor; and the roadway width hinders transit access.

Access to the corridor by alternative modes of transportation

- If investment is made in the corridor and development occurs, there is a need to develop connections to the corridor itself from the surrounding area within Maryland Heights, including Westport Plaza (connecting bicycle/pedestrian infrastructure and transit); adjacent suburbs, and other parts of the St. Louis region.

ADA Compatibility

Current county guidelines require that all sidewalks and curb ramps within the St. Louis County right-of-way or easements should be constructed in accordance with the current approved ADA Accessibility Guidelines. The Department of Justice revised its design guideline regulations of the Americans with Disabilities Act of 1990 (ADA) in 2010.

According to city data, none of the intersections or curb cuts along Dorsett Road provide ADA curb ramps. Site visits found that the intersection of Dorsett Road and Old Dorsett Road (west), near the I-270 interchange, does meet recent guidelines.

To meet ADA standards, the county requires sidewalks maintain a minimum width of five feet on arterial roads and a minimum width of six feet when sidewalks are adjacent to curbs. Site analysis found that a number of segments do not meet these standards.

Stormwater Drainage

The stormwater along the Dorsett Road corridor flows to the following locations:

- The western portion of Dorsett Road (approximately 1,600 feet from Marine Avenue to west of Marine Lane) drains to Louiselle Creek.
- The remainder of Dorsett Road drains to Fee Fee Creek and tributaries of Fee Fee Creek.
- Louiselle Creek and Fee Fee Creek join downstream (north of Dorsett Road), before they connect to Creve Coeur Creek between Creve Coeur Lake and the Missouri River.

Currently, there are generally no water quality systems in place for stormwater drainage in the Dorsett Road right-of-way.

Any improvements along the corridor – either along the right-of-way or on private property on a parcel by parcel basis – will need to be designed per MSD's Rules and Regulations and Engineering Design Requirements for Sanitary Sewer and Stormwater Drainage Facilities. The stormwater requirements include conveyance, quantity and quality.

Conveyance

There are existing storm sewers and structures along Dorsett Road. These sewer systems convey the stormwater from Dorsett Road to Fee Fee and Louiselle creeks. Improvements along Dorsett Road or on private property can connect to these systems, however modifications may be required to accommodate the changed condition resulting from the improvements.

Stormwater in the Dorsett Road corridor drains to Fee Fee Creek and tributaries of Fee Fee Creek.

Quantity

Stormwater quantity management is required if the differential runoff between the existing and proposed conditions results in an increase of 2 cubic feet per second or greater during a high intensity, 20 minute long rain event that normally occurs in the area only once every 15 years. The stormwater quantity along the Dorsett Road right-of-way should not increase if the pavement width is reduced and the new paths are constructed of a permeable pavement, therefore no stormwater detention should be required for the Dorsett Road improvements. If the paths are to be constructed of impervious pavement then stormwater detention may be required. The stormwater quantity management requirements on private property will depend on the differential runoff resulting from the proposed improvements and will need to be calculated and evaluated on a site by site basis as property owners redevelop their properties.

Quality

Water quality management is required if an acre or more is disturbed. A multi-use path of 12 feet in width, at a length of 3,630 feet, would represent a total surface area of one acre. As outlined in the upcoming recommendations section, the Dorsett Road Great Streets Plan calls for a 12 foot wide multi-use path along the entire three mile length of

the corridor. Therefore, assuming the city goes forward with this plan, it along with St. Louis County will have to plan for water quality provisions in future design and engineering processes. The combination of pervious pavement and rain gardens will satisfy most of the water quality requirement. If these strategies are not able to fully meet the requirements then a proprietary Best Management Practice ("BMP") device such as a hydrodynamic separator could be used to meet the remainder of the requirement. The stormwater quality management requirements on private property will depend on the size of the disturbed area and the projected percentage of the total land area that will be covered by impervious surfaces, following the completion of proposed improvements. These metrics, per MSD guidance, will need to be evaluated on a site by site basis as individual property owners along the corridor redevelop properties. According to the BMP Toolbox on MSD's website as well as conversations with MSD, the acceptable Urban BMP Options that can be used to meet the water quality volume criteria include bioretention, permeable pavement, amended soils disconnection, rainwater harvesting, sheet flow to buffer, sand filters, stormwater ponds and wetlands, proprietary BMP's, open channel use, and dry detention basins.

Storm Sewer

The Dorsett Road corridor has open drainage at the east and west ends, and enclosed drainage in between. The storm sewers generally run along one side of the road, and are typically located along the north side behind the curb.

Sanitary Sewer

The sanitary sewers along the Dorsett Road corridor are generally along the south side of the road from Pheasant Run Drive to Schuetz Road, and on either side of Sally Drive.

Power and Communication

The power lines along Dorsett Road are generally inside the existing right-of-way and overhead, however there are two areas with extensive underground conduit. The first area is between I-270 and Progress Parkway, and the second area is near Industrial Drive and Fee Fee Road (South). In addition, Ameren Missouri has plans to rebuild the electric substation currently located at 11670 Dorsett Road on a property purchased for this purpose at 11520 Dorsett Road sometime in the next few years, dependent on budget considerations. This project will require altering the facilities along Dorsett Road near the new substation. Ameren Missouri does not have specifics on the design at this time, but typically circuits exit the substation in an underground duct bank and transition to overhead circuits. The overhead power lines are along one side of Dorsett Road, however they do switch back and forth from south to north along the corridor as follows:

- West of I-270 the power poles are on the north side of Dorsett Road from Marine Lane to Pheasant Run Drive, and from McKelvey Hills Drive to I-270, otherwise they are on the south side of the road. The poles are within two to eight feet of the pavement except for the area west of Marine Lane.
- East of I-270 the power poles are typically between the existing sidewalk and Dorsett Road, on the south side from Progress Parkway to Schuetz Road, and on the north side from Schuetz Road to Adie Road . Power poles do not follow Dorsett Road at all from Adie Road east to Lindbergh.

The communication lines are in underground conduits along the Dorsett Road corridor.

Previous Studies

Maryland Heights Comprehensive Plan (adopted 1987, revisions and amendments in 2001, 2005, 2007, 2008, and 2011)

The Maryland Heights Comprehensive Plan identifies Dorsett Road as the principal arterial road within the city and the closest road the city has to a Main Street. The road links two of the city's major planning districts: Westport Industrial Planning District to the east and the West Residential Planning District. Comprehensive plan recommendations for the Westport Industrial Planning District include the following guidelines for "Smart Growth" in the corridor:

- Mix of land uses
- Take advantage of compact building design
- Create a range of housing opportunities and choices
- Create walkable neighborhoods
- Foster distinctive, attractive communities with a strong sense of place
- Preserve open space, farmland, natural beauty, and critical environmental areas
- Strengthen and direct development towards existing communities
- Provide a variety of transportation choices
- Make development decisions predictable, fair, and cost effective
- Encourage community and stakeholder collaboration in development decisions

Other previous studies that informed this project include:

- McKelvey Woods Phase II: Project Alignment
- Maryland Heights Citizen Survey: 2013
- St. Louis County Bicycle Facilities Plan
- Gateway Bike Plan: Regional Routes to Sustainability
- Building the River Ring: A Citizen Driven Regional Plan