



Road Board Application

PROJECT INFORMATION

Name:

Limits:

Project Length (miles) _____ Traffic Volume: ADT _____ Year _____

CONTACT INFORMATION

Sponsoring Agency:

Contact Person Name:

Title:

Telephone Number:

E-mail Address:

FEDERAL FUNCTIONAL CLASSIFICATION: Please check one of the following.

- | | | |
|---|---|--|
| <input type="checkbox"/> Principal Arterial | <input type="checkbox"/> Minor Arterial | <input type="checkbox"/> Major Collector |
| <input type="checkbox"/> Minor Collector | <input type="checkbox"/> Local | <input type="checkbox"/> Unclassified |

PROJECT DESCRIPTION: Please attach additional pages if necessary.

PROJECT TYPE: Please check one of the following.

- | | | |
|--|--|---|
| <input type="checkbox"/> Traffic Flow | <input type="checkbox"/> Safety | <input type="checkbox"/> Condition |
| <input type="checkbox"/> Operation Safe Streets (10 pts) | <input type="checkbox"/> New Road (10 pts) | <input type="checkbox"/> Study (10 pts) |

Traffic Flow: Select a priority condition that is based on the level of service.

- High Priority Condition (10 pts)
Peak hour Level of Service E or F and project includes features to improve traffic flow and reduce travel time delay.
- Medium Priority Condition (5 pts)
Peak hour Level of Service D and project includes features to improve traffic flow and reduce travel time delay.
- Lower Priority Condition (0 pts)
Peak hour Level of Service A, B or C and project includes features to improve traffic flow and reduce travel time delay.

Safety: Select a priority condition that is based on the crash rate.

- High Priority Condition (10 pts)
Crash rate per million vehicle miles is 6.0 or higher and project addresses specific safety issues(s) related to the crashes or addresses fatal/serious injury crash(es).
- Medium Priority Condition (5 pts)
Crash rate per million vehicle miles is 3.0 to 5.9 and project addresses specific safety issues(s) related to crashes.
- Lower Priority Condition (0 pts)
Accident rate per million vehicle miles is less than 3.0 and project addresses specific safety issue(s).

Total Number of Crashes Over Last 3 Years _____

Number of Crashes by type: Fatal _____ Serious Injury _____ Property Damage Only _____

Condition

Please complete the following sections using either the pavement condition index from inventory completed by Transmap or the bridge sufficiency rating calculated by MoDOT.

Pavement Condition (Arterials Only): Select a priority condition that is based on the Pavement Condition Index.

- High Priority Condition (10 pts)
Pavement Condition Index 20-56 on scale of 100 or equivalent and project will improve deficient condition.
- Medium Priority Condition (5 pts)
Pavement Condition Index 57-75 on scale of 100 or equivalent and project will improve deficient condition.
- Lower Priority Condition (0 pts)
Pavement Condition Index greater than 75 on scale of 100 or equivalent and project will improve deficient condition.

Pavement Condition Index _____

Bridge: Select a priority condition that is based on the Bridge Sufficiency Rating.

High Priority Condition (10 pts)

Bridge sufficiency rating less than 20 on scale of 100 and project will improve deficient condition.

Medium Priority Condition (5 pts)

Bridge sufficiency rating 20-49.9 on scale of 100 and project will improve deficient condition.

Lower Priority Condition (0 pts)

Bridge sufficiency rating greater than 50 on scale of 100 and project will improve deficient condition.

Bridge Sufficiency Rating _____

Operation Safe Streets – Arterials and Major Collectors Only

The goal of Operation Safe Streets is to promote a systematic approach to improve roadway safety in St. Charles County.

Safety Countermeasures – Rural Roads: Please check as many of the following that apply.

Clear Zone Improvements

High Friction Pavement Treatment

Reconfiguration

Rumble Strips

Safety Edge

Signs (advance curve warning signs, reflective posts, dynamic curve warning signs)

Other _____

Safety Countermeasures – Urban Roads: Please check as many of the following that apply.

Access Management

Clear Zone Improvements

HAWK Pedestrian Beacon

High Friction Pavement Treatment

Median and Pedestrian Crossing Islands

Reconfiguration

Remove Unwarranted Stop Signs or Signals

Traffic Signal Backplates with Reflective Borders

Other _____

OTHER INFORMATION

Anticipated Useful Life of the Proposed Improvements (years) _____

Estimated Date of Completion _____

FUNDING FOR IMPROVEMENTS

	County	City	Other	Total
Design				
Right-of-Way				
Utility Relocations				
Construction				
TOTAL				
PERCENT (%)				

FINANCIAL PLAN

Design	2016	2017	2018	Total
Sponsor				
County				
Federal				
Other				
Utility Relocations	2016	2017	2018	Total
Sponsor				
County				
Federal				
Other				
Right-of-Way	2016	2017	2018	Total
Sponsor				
County				
Federal				
Other				
Construction	2016	2017	2018	Total
Sponsor				
County				
Federal				
Other				

Please make sure the following documents are submitted.

- | | | |
|---|---|--|
| <input type="checkbox"/> Signed Application | <input type="checkbox"/> Conceptual Plans | <input type="checkbox"/> Support Documentation |
| <input type="checkbox"/> Location Map | <input type="checkbox"/> Cost Estimate and Schedule | <input type="checkbox"/> Performance Measures |

A minimum of 10 points is required for the project to be considered.

_____ Signature

_____ Date

Hanley Road Reconstruction and Improvements

Objectives and Outcomes

This project includes

- replacing the two existing 10.5-foot wide travel lanes with two new 12-foot wide travel lanes,
- 4-foot wide bicycle lanes
- enclosed storm sewers
- sidewalks

This project will tie into the recently completed CMAQ traffic signal project at Feise Road

- including left turn lane,
- pedestrian crosswalk,
- handicap ramp and
- pedestrian signal heads

Projects goals and objectives, anticipated outcomes

- Increase safety
 - improved sight distances
 - bike and pedestrian facilities
 - striping / turn lanes,
 - signage
- Performance measures
 - travel time, speed, delay and pedestrian facilities use
 - with reports to St. Charles County Road Board

Standard TIP Project Development Schedule Form (many stages can occur concurrently)

Activity Description	Start Date (MM/YYYY)	Finish Date* (MM/YYYY)	Time Frame (Months)
Receive Notification Letter			
Execute Agreement (Project sponsor & DOT)			
Engineering Services Contract Submitted & Approved ¹			
Obtain Environmental Clearances (106, CE-2, etc.)			
Public Meeting/Hearing			
Develop and Submit Preliminary Plans			
Preliminary Plans Approved			
Develop and Submit Right-of-Way Plans			
Review and Approval of Right-of-Way Plans			
Submit & Receive Approval for Notice to Proceed for Right-of-Way Acquisition (A-Date) ²			
Right-of-Way Acquisition			
Utility Coordination			
Develop and Submit PS&E			
District Approval of PS&E/Advertise for Bids ³			
Submit and Receive Bids for Review and Approval			
Project Implementation/Construction			

*Finish date must match fiscal year for each for each milestone listed below:

1. Preliminary engineering obligated - PE/Planning/Environ. Studies
2. Right of way obligated - Right-Of-Way
3. Construction/implementation funds obligated - Implementation/Construction Engineering

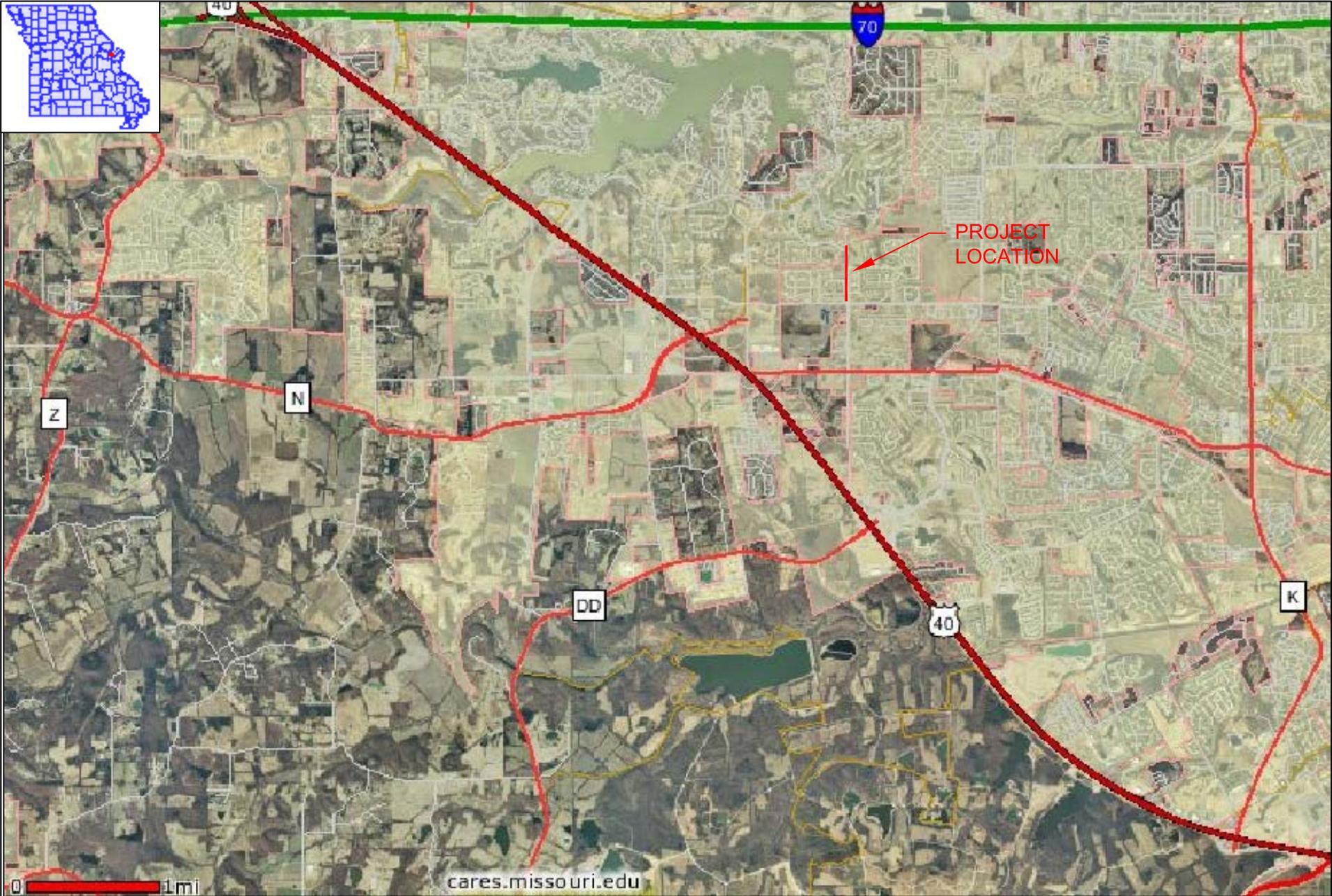
FY 2016 = 10/2015 - 09/2016

FY 2017 = 10/2016 - 09/2017

FY 2018 = 10/2017 - 09/2018

FY 2019 = 10/2018 - 09/2019

APPENDIX A



KEC

KEHOE ENGINEERING COMPANY INC.
2920 Sandtrap Drive
Dardenne Prairie, MO 63368
636.978.6008 tel. 636.898.0923 fax.
www.KehoeEngineering.com

**EXHIBIT 1 - PROJECT LOCATION MAP
REGIONAL AREA**

02/12/2015

APPENDIX B



KEHOE ENGINEERING COMPANY, INC.

Hanley Road Reconstruction and Improvements

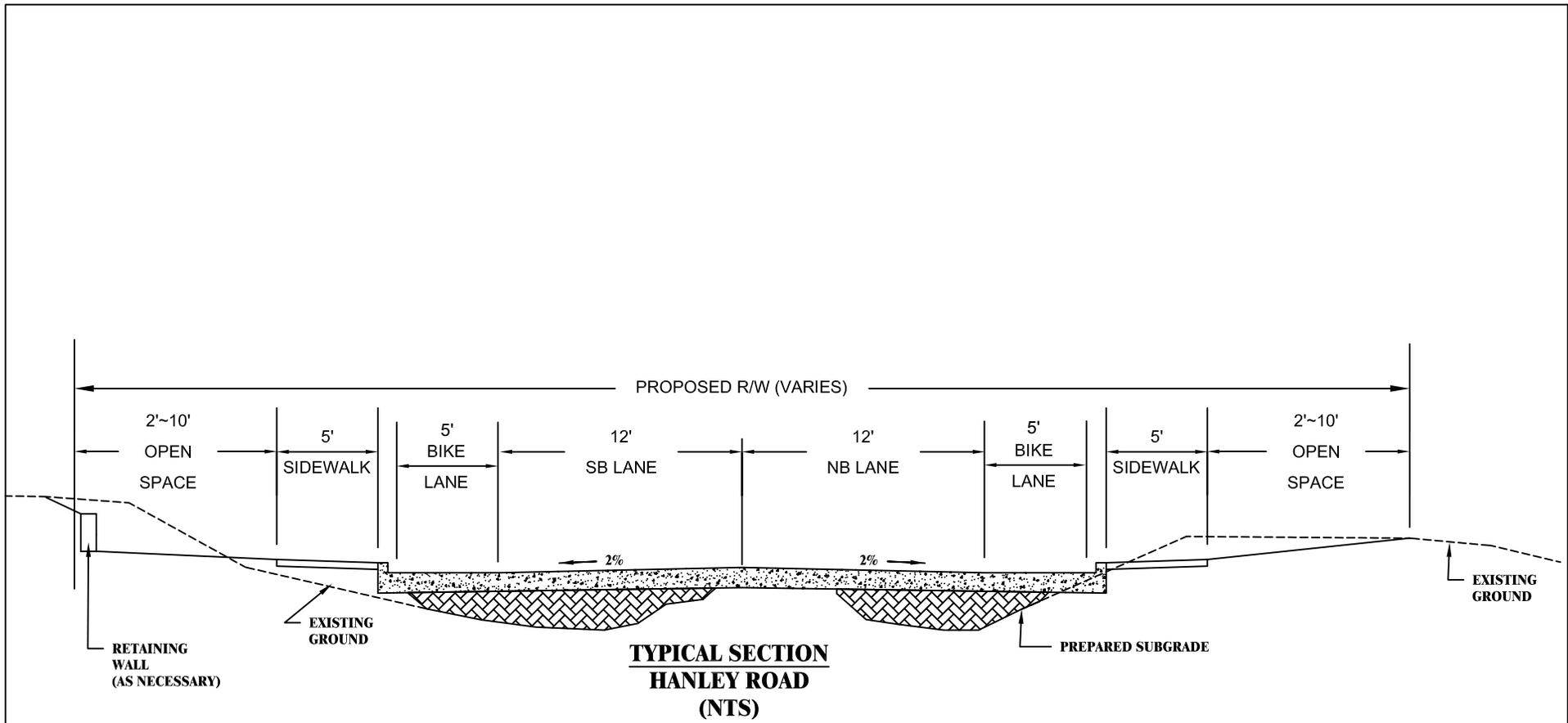
Project No.: 970810

Date: 02/12/2015

Engineer's Opinion of Probable Construction Costs

Concept Plan - Preliminary Not for Construction

	DESCRIPTION OF ITEM	UNIT	QUANTITY	UNIT COST	COST	
1	Mobilization	LS	1	\$ 53,000.00	\$ 53,000.00	
2	Removal of Improvements	LS	1	\$ 10,600.00	\$ 10,600.00	
3	Contractor Furnished Survey	LS	1	\$ 4,240.00	\$ 4,240.00	
Roadway Items						
4	Class A Excavation	LS	1.00	\$ 19,080.00	\$ 19,080.00	
5	Silt Fence	LF	3600	\$ 2.44	\$ 8,776.80	
6	Erosion Control Mat	SY	800	\$ 7.37	\$ 5,893.60	
7	Compacting in Cut	STA	10	\$ 466.40	\$ 4,664.00	
8	Turf Type Tall Fescue Sod	SY	320	\$ 7.42	\$ 2,374.40	
9	Seeding and Mulching	AC	0.75	\$ 3,180.00	\$ 2,385.00	
10	2' Concrete Curb & Gutter	LF	5000	\$ 39.22	\$ 196,100.00	
11	Coldmilling (1 3/4")	SY	6700	\$ 1.91	\$ 12,783.60	
12	5' NRPCC Sidewalk (4" Thick)	SY	2500	\$ 72.08	\$ 180,200.00	
13	Handicap Ramps	EA	12	\$ 424.00	\$ 5,088.00	
14	Pedestrian Signalization at Feise Road Intersection	EA	1	\$ 8,480.00	\$ 8,480.00	
15	Bituminous Pavement Mixture (PG64-22 (1 3/4" BP-1)	TONS	650	\$ 180.20	\$ 117,130.00	
16	Bituminous Pavement Mixture (PG64-22 (8" Base)	TONS	1550	\$ 56.18	\$ 87,079.00	
17	Type 5 Aggregate Base (4" Thick)	SY	3400	\$ 6.36	\$ 21,624.00	
18	Paved Approach (7" Thick)	SY	750	\$ 47.70	\$ 35,775.00	
19	18" RCP	LF	960	\$ 53.00	\$ 50,880.00	
20	24" RCP	LF	865	\$ 106.00	\$ 91,690.00	
21	36" RCP	LF	685	\$ 159.00	\$ 108,915.00	
22	Utility Adjustments	LS	1	\$ 10,600.00	\$ 10,600.00	
23	Segmental Block Retaining Wall	SF	2580	\$ 16.96	\$ 43,756.80	
24	Single Curb Inlet	EA	12	\$ 1,908.00	\$ 22,896.00	
25	Manhole	EA	2	\$ 1,908.00	\$ 3,816.00	
				Sub-Total	\$ 1,039,987.20	
Signing						
26	Permanent Signing	LS	1	\$ 5,300.00	\$ 5,300.00	
				Sub-Total	\$ 5,300.00	
Striping						
27	4" White Acrylic Waterborne Pavement Marking	LF	375	\$ 0.21	\$ 79.50	
28	4" Yellow Acrylic Waterborne Pavement Marking	LF	5000	\$ 0.21	\$ 1,060.00	
29	6" White Acrylic Waterborne Pavement Marking	LF	5000	\$ 1.06	\$ 5,300.00	
30	Type 1 Preformed Marking Tape (8" White)	LF	90	\$ 5.83	\$ 524.70	
31	Type 2 Preformed Marking Tape (Left Arrow)	EA	1	\$ 413.40	\$ 413.40	
				Sub-Total	\$ 7,377.60	
					Construction (Base Bid)	\$ 1,121,000.00
			w/ Inflation	3.5%	1	\$ 1,160,000.00
			Contingency (%):	20%		\$ 232,000.00
					Design Engineering:	\$ 116,600.00
					Right-of-Way:	\$ 172,000.00
					Construction Engineering:	\$ 102,820.00
					Rounded Total:	\$ 1,783,400.00



KEC

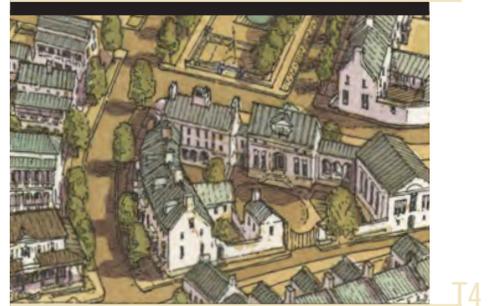
KEHOE ENGINEERING COMPANY INC.
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 636.978.6008 tel. 636.898.0923 fax.
 www.KehoeEngineering.com

TYPICAL SECTION

02/12/2015

APPENDIX C

DARDENNE
PRAIRIE
SMART CODE



1.1 AUTHORITY

- 1.1.1 The action of The City of Dardenne Prairie, Missouri in the adoption of this Code is authorized under the Municipal Code of the City of Dardenne Prairie, Missouri (the "Municipal Code" and Chapter 89, RSMo.
- 1.1.2 This Code was adopted as one of the instruments of implementation of the public purposes and objectives of the City Plan adopted by the Planning and Zoning Commission. This Code is declared to be in accord with the City Plan, as required by Chapter 89, RSMo.
- 1.1.3 This Code was adopted to promote the health, safety and general welfare of the The City of Dardenne Prairie, Missouri and its citizens, including protection of the environment; conservation of land, energy and natural resources; reduction in vehicular traffic congestion, more efficient use of public funds, health benefits of a pedestrian environment, historic preservation, education and recreation, reduction in sprawl development, and improvement of the built environment.
- 1.1.4 This Code was adopted and may be amended by the Board of Aldermen upon a recommendation of the Planning and Zoning Commission.

1.2 APPLICABILITY

- 1.2.1 Provisions of this Code are activated by "shall" when required; "should" when recommended; and "may" when optional.
- 1.2.2 The provisions of this Code, when in conflict, shall take precedence over those of other codes, ordinances, regulations and standards except the Local Health and Safety Codes, including, but not necessarily limited to Title II and Title V of the Municipal Code, as amended.
- 1.2.3 Title IV of the Municipal Code, as amended, (the "Existing Local Codes") shall continue to be applicable to issues not covered by this Code except where the Existing Local Codes would be in conflict with Section 1.3 Intent.
- 1.2.4 Capitalized terms used throughout this Code may be defined in Article 7 Definitions of Terms. Article 7 contains regulatory language that is integral to this Code. Those terms not defined in Article 7 shall be accorded their commonly accepted meanings. In the event of conflicts between these definitions and those of the Existing Local Codes, those of this Code shall take precedence.

1.3 INTENT

The intent and purpose of this Code is to enable, encourage and qualify the implementation of the following policies:

1.3.1 [RESERVED]**1.3.2 THE COMMUNITY**

- a. That neighborhoods and Regional Centers should be compact, pedestrian-oriented and Mixed Use.
- b. That neighborhoods and Regional Centers should be the preferred pattern of development and that Districts specializing in a single use should be the exception.
- c. That ordinary activities of daily living should occur within walking distance of most dwellings, allowing independence to those who do not drive.
- d. That interconnected networks of Thoroughfares should be designed to disperse

- and reduce the length of automobile trips.
 - e. That within neighborhoods, a range of housing types and price levels should be provided to accommodate diverse ages and incomes.
 - f. That appropriate building Densities and land uses should be provided within walking distance of transit stops.
 - g. That Civic, Institutional and Commercial activity should be embedded in downtowns, not isolated in remote single-use complexes.
 - h. That schools should be sized and located to enable children to walk or bicycle to them.
 - i. That a range of Open Space including Parks, Squares, and playgrounds should be distributed within neighborhoods and downtowns.
- 1.3.3 **THE BLOCK AND THE BUILDING**
- a. That buildings and landscaping should contribute to the physical definition of Thoroughfares as Civic places.
 - b. That development should adequately accommodate automobiles while respecting the pedestrian and the spatial form of public areas.
 - c. That the design of streets and buildings should reinforce safe environments, but not at the expense of accessibility.
 - d. That architecture and landscape design should grow from local climate, topography, history, and building practice.
 - e. That buildings should provide their inhabitants with a clear sense of geography and climate through energy efficient methods.
 - f. That Civic Buildings and public gathering places should be provided as locations that reinforce community identity and support self-government.
 - g. That Civic Buildings should be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the city.
 - h. That the preservation and renewal of historic buildings should be facilitated to affirm the continuity and evolution of society.
 - i. That the harmonious and orderly evolution of urban areas should be secured through form-based codes.
- 1.3.4 **THE TRANSECT**
- a. That Communities should provide meaningful choices in living arrangements as manifested by distinct physical environments.
 - b. That the Transect Zone descriptions on Table 1 shall constitute the Intent of this Code with regard to the general character of each of these environments.
- 1.4 **PROCESS**
- 1.4.1 [RESERVED]
- 1.4.2 The geographic locations of the Sectors and the standards for the Transect Zones shall be determined as set forth in Article 2, Article 3, Article 4, and Article 5 shall be approved by the Board of Aldermen, after recommendation by the Planning and Zoning Commission, pursuant to Section 89.060 RSMo., as amended. Once these determinations have been incorporated into this Code and its associated plans, then projects that require no Variances or Warrants, or only Warrants, shall be processed administratively without public hearing.
- 1.4.3 Any person aggrieved by a decision of the Town Architect may, within fifteen (15) days from the date of the denial, appeal directly to the Board of Aldermen of the City in writing, setting forth in a concise statement the act being appealed and the grounds for its reversal. A hearing on the appeal shall be held before the Board of

- shall be a primary consideration of the Thoroughfare. Design conflict between vehicular and pedestrian movement generally shall be decided in favor of the pedestrian.
- e. The Thoroughfare network shall be designed to define Blocks of an average size prescribed in Table 12c. The perimeter shall be measured as the sum of Lot Frontage Lines. Block perimeter at the edge of the development parcel shall be subject to approval by Warrant.
 - f. All Thoroughfares shall terminate at other Thoroughfares, forming a network. Internal Thoroughfares shall connect wherever possible to those on adjacent sites. Cul-de-sacs shall be subject to approval by Warrant to accommodate specific site conditions only.
 - g. Each Lot shall Enfront a vehicular Thoroughfare, except that 20% of the Lots within each Transect Zone may Enfront a Passage.
 - h. Thoroughfares along a designated B-Grid may be exempted by Warrant from one or more of the specified Public Frontage or Private Frontage requirements. See Table 4.
 - i. Standards for Paths and Bicycle Trails shall be approved by Warrant.
 - j. The standards for Thoroughfares within Special Districts shall be determined by Variance.

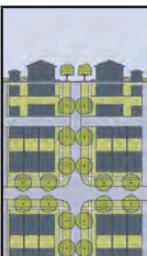
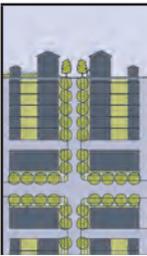
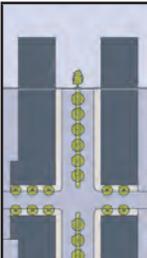
3.8.2 VEHICULAR LANES

- a. Thoroughfares may include vehicular lanes in a variety of widths for parked and for moving vehicles, including bicycles. The approximate standards for vehicular lanes shall be as shown in Table 14a.
- b. A bicycle network consisting of Bicycle Trails, Bicycle Routes and Bicycle Lanes should be provided throughout as defined in Article 7 Definitions of Terms and allocated as specified in Table 12. The community bicycle network shall be connected to existing or proposed regional networks wherever possible.

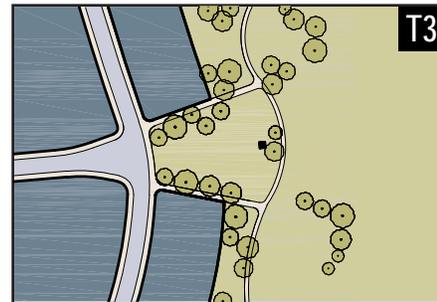
3.8.3 PUBLIC FRONTAGES

- a. **GENERAL TO ALL ZONES T3, T4, T5, T6**
 - i. The Public Frontage contributes to the character of the Transect Zone, and includes the types of Sidewalk, Curb, Planter, Bike Lanes and Street Trees.
 - ii. Public Frontages shall be designed as shown in Table 3a and Table 3b and allocated within Transect Zones as specified in Table 12.
 - iii. Within the Public Frontages, the prescribed types of Public Planting and Public Lighting shall be as shown in Table 17. The spacing may be adjusted by Warrant to accommodate specific site conditions.
- b. **SPECIFIC TO ZONES T3**
 - i. The Public Frontage shall include trees of various species, naturalistically clustered, as well as understory.
 - ii. The introduced landscape shall consist primarily of native species requiring minimal irrigation, fertilization and maintenance. Sod shall be permitted only by Warrant.
- c. **SPECIFIC TO ZONE T4, T5, T6**
 - i. The introduced landscape shall consist primarily of durable species tolerant of soil compaction.
- d. **SPECIFIC TO ZONE T4**
 - i. The Public Frontage shall include trees planted in a regularly-spaced Allee

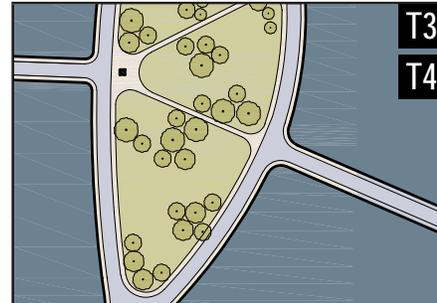
TABLE 1. TRANSECT ZONE DESCRIPTIONS

<p>T-1 NATURAL</p> <p>General Character: Natural landscape with some agricultural use</p> <p>Building Placement: Not applicable</p> <p>Frontage Types: Not applicable</p> <p>Typical Building Height: Not applicable</p> <p>Type of Civic Space: Parks, Greenways, Playgrounds</p> <p style="text-align: right; color: red;">Not Applicable</p>	 <p style="text-align: right; background-color: black; color: white; padding: 2px;">T1</p>
<p>T-2 RURAL</p> <p>General Character: Primarily agricultural with woodland & wetland and scattered buildings</p> <p>Building Placement: Variable Setbacks</p> <p>Frontage Types: Not applicable</p> <p>Typical Building Height: 1- to 2-Story</p> <p>Type of Civic Space: Parks, Greenways, Playgrounds</p> <p style="text-align: right; color: red;">Not Applicable</p>	 <p style="text-align: right; background-color: black; color: white; padding: 2px;">T2</p>
<p>T-3 SUB-URBAN</p> <p>General Character: Lawns, and landscaped yards surrounding detached single-family houses; pedestrians occasionally</p> <p>Building Placement: Large and variable front and side yard Setbacks</p> <p>Frontage Types: Porches, fences, naturalistic tree planting</p> <p>Typical Building Height: 1- to 2.5-Story</p> <p>Type of Civic Space: Parks, Greenways, Playgrounds</p>	 <p style="text-align: right; background-color: black; color: white; padding: 2px;">T3</p>
<p>T-4 GENERAL URBAN</p> <p>General Character: Mix of Houses, Townhouses & small Apartment buildings, with scattered Commercial activity; balance between landscape and buildings; presence of pedestrians</p> <p>Building Placement: Shallow to medium front and side yard Setbacks</p> <p>Frontage Types: Porches, fences, Dooryards</p> <p>Typical Building Height: 2- to 3-Story with a few taller Mixed Use buildings</p> <p>Type of Civic Space: Squares, Greens, Playgrounds</p>	 <p style="text-align: right; background-color: black; color: white; padding: 2px;">T4</p>
<p>T-5 URBAN CENTER</p> <p>General Character: Shops mixed with Townhouses, larger Apartment houses, Offices, workplace, and Civic buildings; predominantly attached buildings; trees within the public right-of-way; substantial pedestrian activity</p> <p>Building Placement: Shallow Setbacks or none; buildings oriented to street defining a street wall</p> <p>Frontage Types: Stoops, Shopfronts, Galleries</p> <p>Typical Building Height: 3- to 4-Story with some variation</p> <p>Type of Civic Space: Plazas, Squares, Playgrounds</p>	 <p style="text-align: right; background-color: black; color: white; padding: 2px;">T5</p>
<p>T-6 URBAN CORE</p> <p>General Character: Medium to high-Density Mixed Use buildings, entertainment, Civic and cultural uses. Attached buildings forming a continuous street wall; trees within the public right-of-way; highest pedestrian and transit activity</p> <p>Building Placement: Shallow Setbacks or none; buildings oriented to street, defining a street wall</p> <p>Frontage Types: Stoops, Dooryards, Forecourts, Shopfronts, Galleries, and Arcades</p> <p>Typical Building Height: 4- to 6-plus Story with a few shorter buildings</p> <p>Type of Civic Space: Plazas, Squares, Playgrounds</p>	 <p style="text-align: right; background-color: black; color: white; padding: 2px;">T6</p>

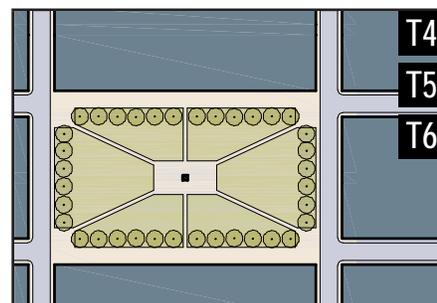
a. **Park:** A natural preserve available for unstructured recreation. A park may be independent of surrounding building Frontages. Its landscape shall consist of paths and trails, meadows, waterbodies, woodland and open shelters, all naturalistically disposed. Parks may be lineal, following the trajectories of natural corridors. The minimum size should be 8 acres. Larger parks may be approved by Warrant as Special Districts in all zones.



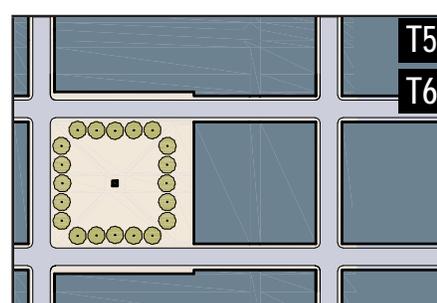
b. **Green:** An Open Space, available for unstructured recreation. A green may be spatially defined by landscaping rather than building Frontages. Its landscape shall consist of lawn and trees, naturalistically disposed. The minimum size should be 1/2 acre and the maximum shall be 8 acres.



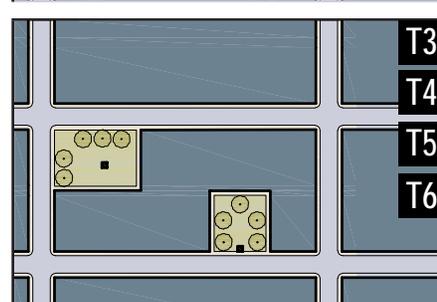
c. **Square:** An Open Space available for unstructured recreation and Civic purposes. A square is spatially defined by building Frontages. Its landscape shall consist of paths, lawns and trees, formally disposed. Squares shall be located at the intersection of important Thoroughfares. The minimum size should be 1/2 acre and the maximum should be 5 acres.



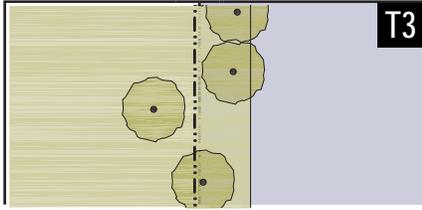
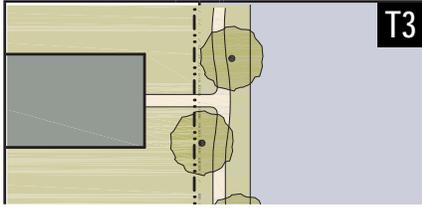
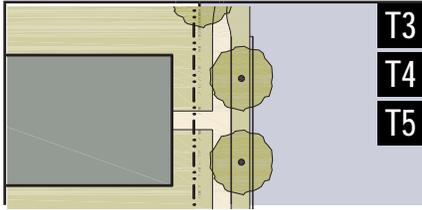
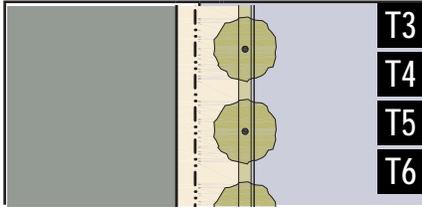
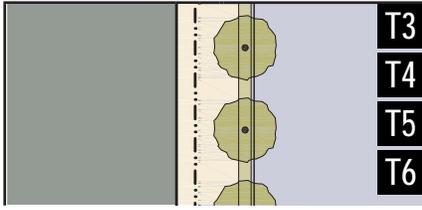
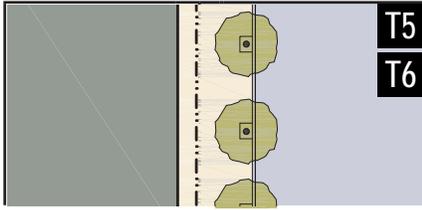
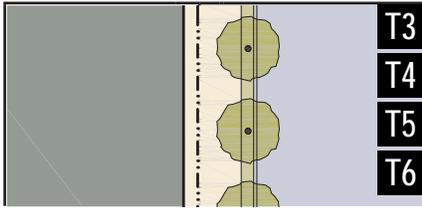
d. **Plaza:** An Open Space available for Civic purposes and Commercial activities. A plaza shall be spatially defined by building Frontages. Its landscape shall consist primarily of pavement. Trees are optional. Plazas should be located at the intersection of important streets. The minimum size should be 1/2 acre and the maximum shall be 2 acres.



e. **Playground:** An Open Space designed and equipped for the recreation of children. A playground should be fenced and may include an open shelter. Playgrounds shall be interspersed within Residential areas and may be placed within a Block. Playgrounds may be included within parks and greens. There shall be no minimum or maximum size.



The Public Frontage is the area between the private Lot line and the edge of the vehicular Lanes. Dimensions are given in Table 3B.

PLAN	
	LOT ▶ ◀ R.O.W. PRIVATE FRONTAGE ▶ ◀ PUBLIC FRONTAGE
<p>a. (HW) Highways: This Frontage has open Swales drained by percolation, Bicycle Trails and no parking. The landscaping consists of the natural condition or multiple species arrayed in naturalistic clusters. Buildings are buffered by distance or berms.</p>	 <p>T3</p>
<p>b. (RD) For Roads: This Frontage has open Swales drained by percolation and a walking Path or Bicycle Trail along one or both sides and Yield parking. The landscaping consists of multiple species arrayed in naturalistic clusters.</p>	 <p>T3</p>
<p>c. (ST) For Street: This Frontage has raised Curbs drained by inlets and Sidewalks separated from the vehicular Lanes by individual or continuous Planters, with parking on one or both sides. The landscaping consists of street trees of a single or alternating species aligned in a regularly spaced Allee.</p>	 <p>T3 T4 T5</p>
<p>d. (DR) For Drive: This Frontage has raised Curbs drained by inlets and a wide Sidewalk or paved Path along one side, related to a Greenway or waterfront. It is separated from the vehicular Lanes by individual or continuous Planters. The landscaping consists of street trees of a single or alternating species aligned in a regularly spaced Allee.</p>	 <p>T3 T4 T5 T6</p>
<p>e. (AV) For Avenues: This Frontage has raised Curbs drained by inlets and wide Sidewalks separated from the vehicular Lanes by a narrow continuous Planter with parking on both sides. The landscaping consists of a single tree species aligned in a regularly spaced Allee.</p>	 <p>T3 T4 T5 T6</p>
<p>f. (CS) (AV) For Commercial Streets or Avenues: This Frontage has raised Curbs drained by inlets and very wide Sidewalks along both sides separated from the vehicular Lanes by separate tree wells with grates and parking on both sides. The landscaping consists of a single tree species aligned with regular spacing where possible but clears the storefront entrances.</p>	 <p>T5 T6</p>
<p>g. (PW) For Parkway: This Frontage has Slip Roads on both sides. It consists of raised Curbs drained by inlets and Sidewalks along both sides, separated from the vehicular Lanes by Planters. The landscaping consists of double rows of a single tree species aligned in a regularly spaced Allee.</p>	 <p>T3 T4 T5 T6</p>

The Private Frontage is the area between the building Facades and the Lot lines.

	SECTION		PLAN	
	LOT PRIVATE FRONTAGE	R.O.W. PUBLIC FRONTAGE	LOT PRIVATE FRONTAGE	R.O.W. PUBLIC FRONTAGE
<p>a. Common Yard: a planted Frontage wherein the Facade is set back substantially from the Frontage Line. The front yard created remains unfenced and is visually continuous with adjacent yards, supporting a common landscape. The deep Setback provides a buffer from the higher speed Thoroughfares.</p>				T3
<p>b. Porch & Fence: a planted Frontage wherein the Facade is set back from the Frontage Line with an attached porch permitted to encroach. A fence at the Frontage Line maintains street spatial definition. Porches shall be no less than 8 feet deep.</p>				T3 T4
<p>c. Terrace or Lightwell: a Frontage wherein the Facade is set back from the Frontage line by an elevated terrace or a sunken Lightwell. This type buffers Residential use from urban Sidewalks and removes the private yard from public encroachment. Terraces are suitable for conversion to outdoor cafes. Syn: Dooryard.</p>				T4 T5
<p>d. Forecourt: a Frontage wherein a portion of the Facade is close to the Frontage Line and the central portion is set back. The forecourt created is suitable for vehicular drop-offs. This type should be allocated in conjunction with other Frontage types.</p>				T4 T5 T6
<p>e. Stoop: a Frontage wherein the Facade is aligned close to the Frontage Line with the first Story elevated from the Sidewalk sufficiently to secure privacy for the windows. The entrance is usually an exterior stair and landing. This type is recommended for ground-floor Residential use.</p>				T4 T5 T6
<p>f. Shopfront: a Frontage wherein the Facade is aligned close to the Frontage Line with the building entrance at Sidewalk grade. This type is conventional for Retail use. It has a substantial glazing on the Sidewalk level and an awning that should overlap the Sidewalk to within 2 feet of the curb. Syn: Retail Frontage.</p>				T4 T5 T6
<p>g. Gallery: a Frontage wherein the Facade is aligned close to the Frontage line with an attached cantilevered shed or a lightweight colonnade overlapping the Sidewalk. This type is conventional for Retail use.</p>				T4 T5 T6
<p>h. Arcade: a Frontage wherein the Facade is a colonnade that overlaps the Sidewalk, while the Facade at Sidewalk level remains at the Frontage Line. This type is conventional for Retail use. The arcade shall be no less than 12 feet wide.</p>				T5 T6

TABLE 5. BUILDING DISPOSITION

This Table approximates the location of the structure relative to the boundaries of each individual Lot, establishing suitable basic building types for each Transect Zone.

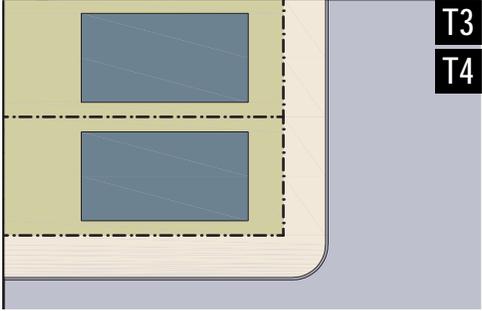
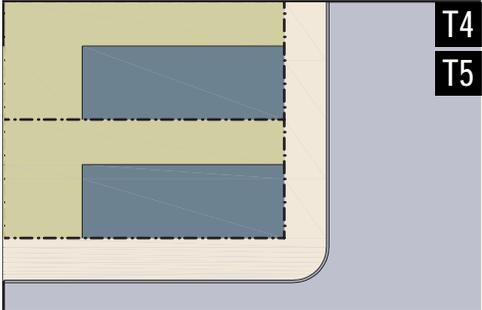
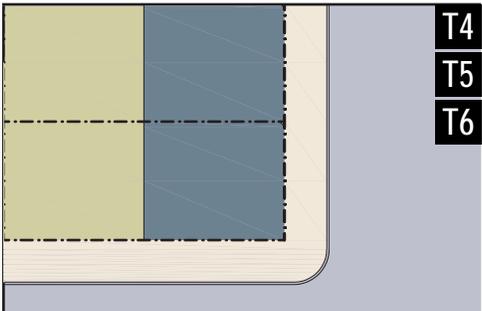
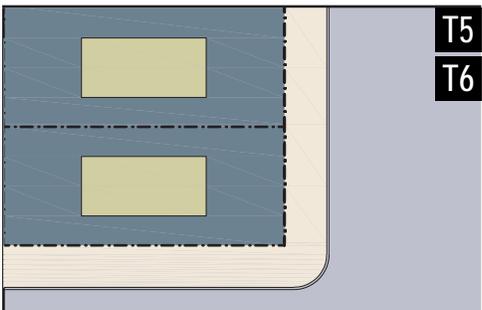
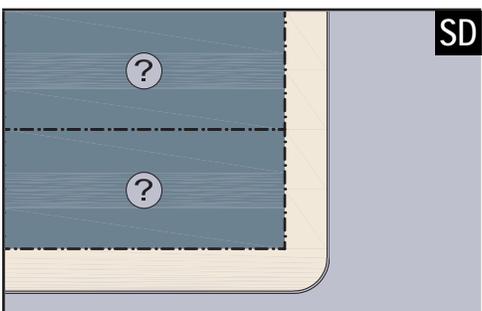
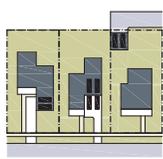
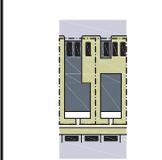
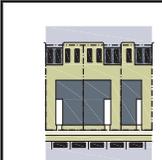
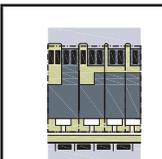
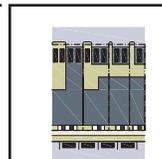
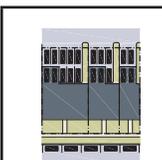
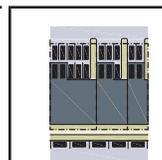
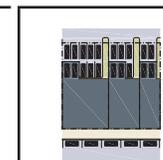
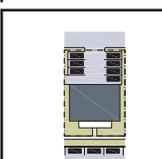
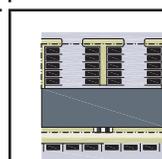
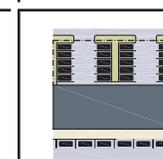
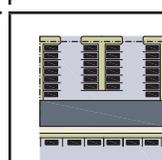
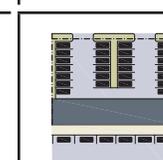
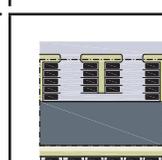
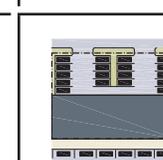
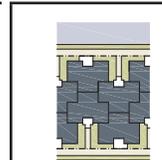
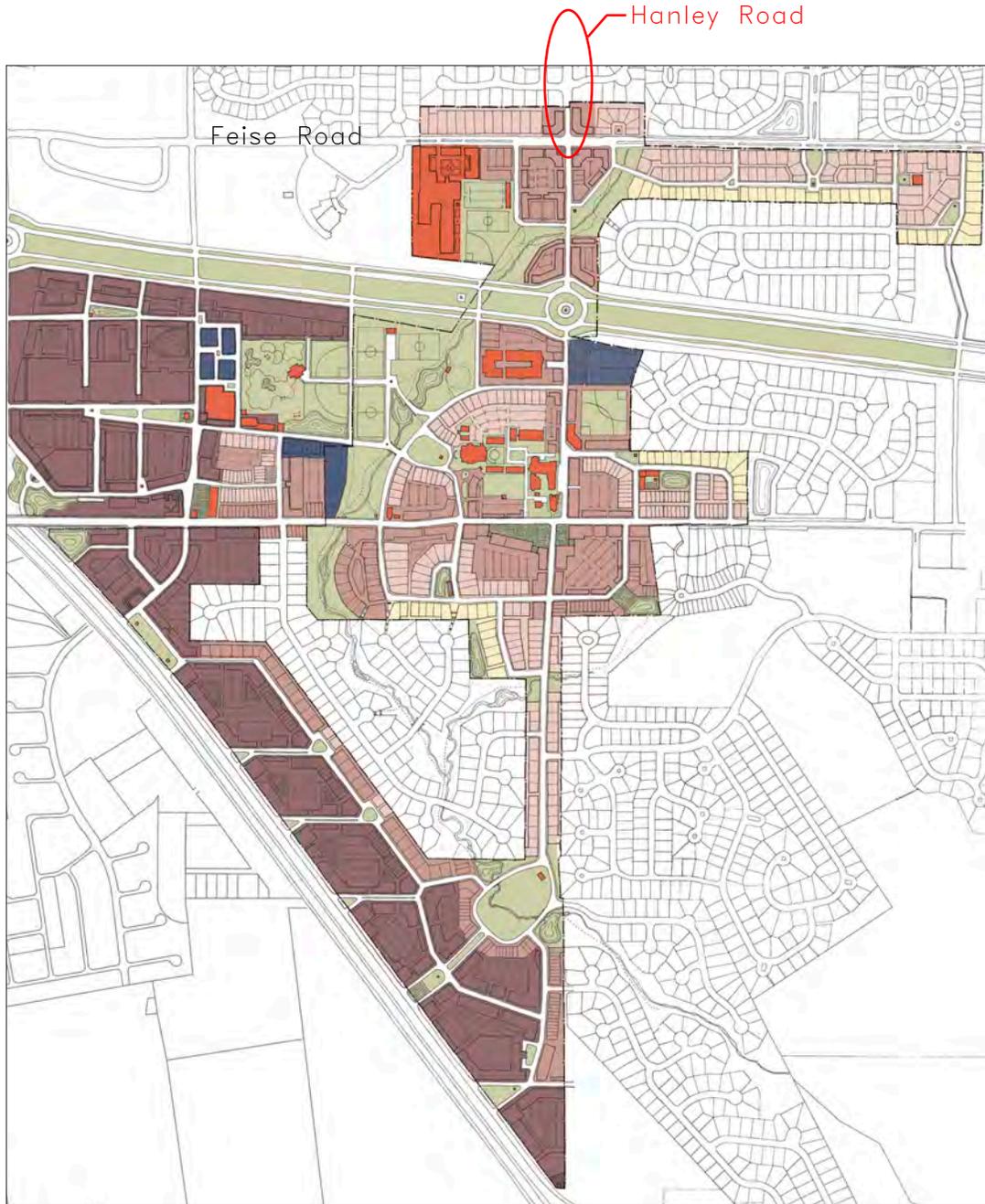
<p>a. Edgeyard: Specific Types - single family House, cottage, villa, estate house, urban villa. A building that occupies the center of its Lot with Setbacks on all sides. This is the least urban of types as the front yard sets it back from the Frontage, while the side yards weaken the spatial definition of the public Thoroughfare space. The front yard is intended to be visually continuous with the yards of adjacent buildings. The rear yard can be secured for privacy by fences and a well-placed Backbuilding and/or Outbuilding.</p>	 <p>T3 T4</p>
<p>b. Sideyard: Specific Types - Charleston single House, double house, zero-lot-line house, twin. A building that occupies one side of the Lot with the Setback to the other side. A shallow Frontage Setback defines a more urban condition. If the adjacent building is similar with a blank party wall, the yard can be quite private. This type permits systematic climatic orientation in response to the sun or the breeze. If a Sideyard House abuts a neighboring Sideyard House, the type is known as a twin or double House. Energy costs, and sometimes noise, are reduced by sharing a party wall in this Disposition.</p>	 <p>T4 T5</p>
<p>c. Rearyard: Specific Types - Townhouse, Rowhouse, Live-Work unit, loft building, Apartment House, Mixed Use Block, Flex Building, perimeter Block. A building that occupies the full Frontage, leaving the rear of the Lot as the sole yard. This is a very urban type as the continuous Facade steadily defines the public Thoroughfare. The rear Elevations may be articulated for functional purposes. In its Residential form, this type is the Rowhouse. For its Commercial form, the rear yard can accommodate substantial parking.</p>	 <p>T4 T5 T6</p>
<p>d. Courtyard: Specific Types - patio House. A building that occupies the boundaries of its Lot while internally defining one or more private patios. This is the most urban of types, as it is able to shield the private realm from all sides while strongly defining the public Thoroughfare. Because of its ability to accommodate incompatible activities, masking them from all sides, it is recommended for workshops, Lodging and schools. The high security provided by the continuous enclosure is useful for crime-prone areas.</p>	 <p>T5 T6</p>
<p>e. Specialized: A building that is not subject to categorization. Buildings dedicated to manufacturing and transportation are often distorted by the trajectories of machinery. Civic buildings, which may express the aspirations of institutions, may be included.</p>	 <p>SD</p>

TABLE 6. BUILDING TYPES

	T3	T4	T5	T6	SD
<p>House: an edge yard building type. A single-family dwelling on a large lot, shared with an ancillary building in the rear yard. <i>Variant: Duplex</i></p>					
<p>Cottage: an edge yard building type. A single-family dwelling, on a regular lot, shared with ancillary building in the rear yard.</p>					
<p>Sideyard House: a sideyard building type. A single-family dwelling which occupies one side of the lot, with the primary yard to the other side, shared with ancillary building in the rear yard. <i>Variant: Double House</i></p>					
<p>Rowhouse: a rear yard building type. A single family dwelling with common walls on the side lot lines, the facades forming a continuous frontage line. Rowhouses are the highest density type able to provide private yards. <i>Syn.: Townhouse</i></p>					
<p>Flexhouse / Live-Work: a rear yard, fully mixed-use building type with one dwelling above or behind a commercial space. <i>Syn.: Corner Store, Shop-front.</i></p>					
<p>Apartment Building: a rear yard residential building type accommodating multiple dwellings disposed above and beside each other. <i>Variant: Loft Building</i></p>					
<p>Liner Building: a building conceived specifically to mask a parking lot or a parking structure from the frontage, without consuming any of the parking itself.</p>					
<p>Mixed-Use Block: a rear yard, flexible commercial building type. Commercial buildings have floorplates deeper than residential ones. <i>Syn.: Warehouse, Flex Building, Office Building.</i></p>					
<p>Carpet Housing: a clustered disposition of patio houses in a block intended to optimize the block's density yield while maintaining a sub-urban scale. <i>Syn.: Tapestry Housing.</i></p>					

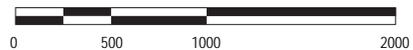


Hanley Road

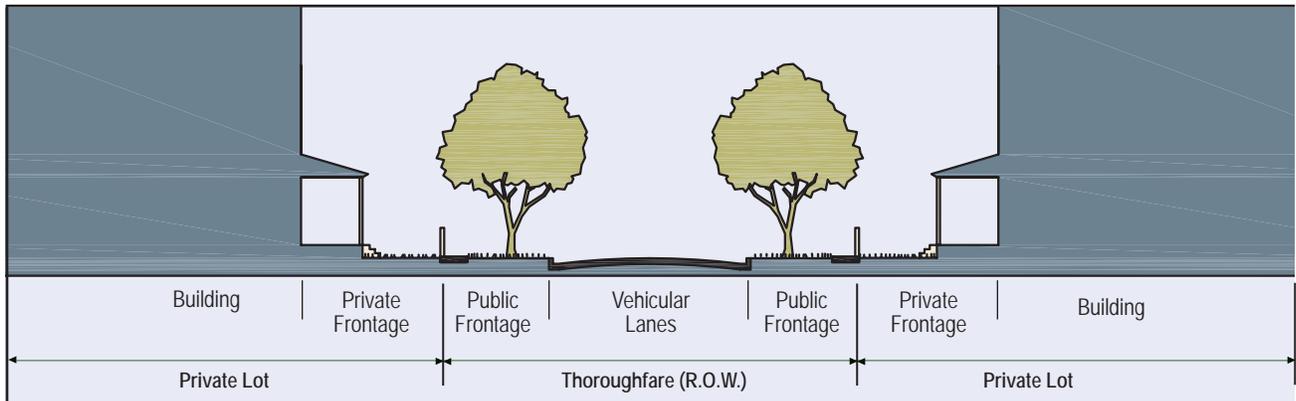
Feise Road

- SD - Special District
- T6 - Urban Core
- T5 - Urban Center
- T4 - General Urban
- T3 - Sub-Urban
- Open Space
- Civic Space

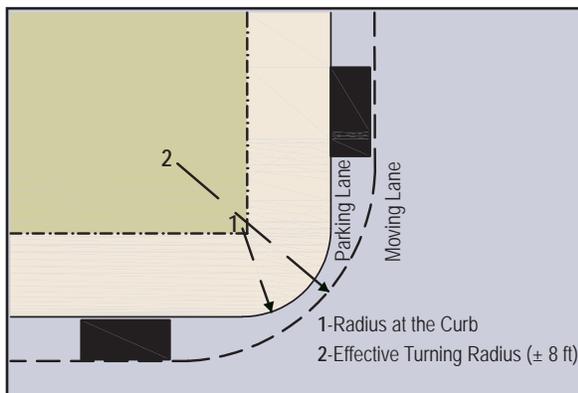
Above, the regulating plan assigns a range of T-Zones to the plan, varying from T-3 Sub-Urban to T-6 Urban Core. Each T-Zone features different thoroughfare and frontage requirements, as well as a variety of building types, in accordance with its level of urban intensity.



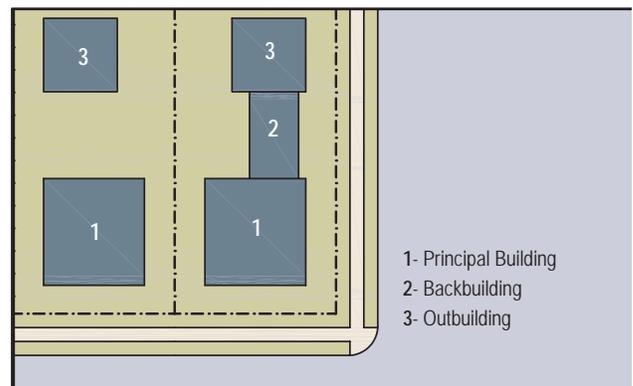
a. THOROUGHFARE & FRONTAGES



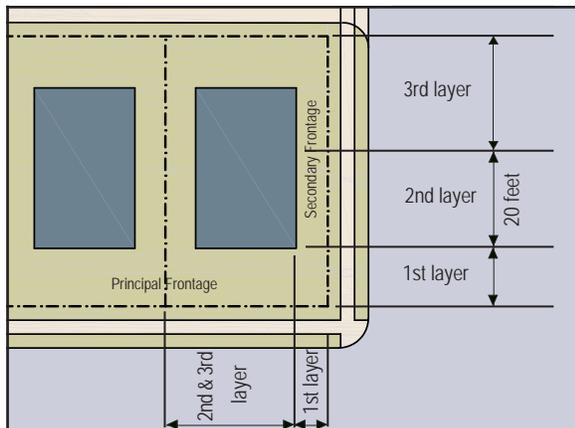
b. TURNING RADIUS



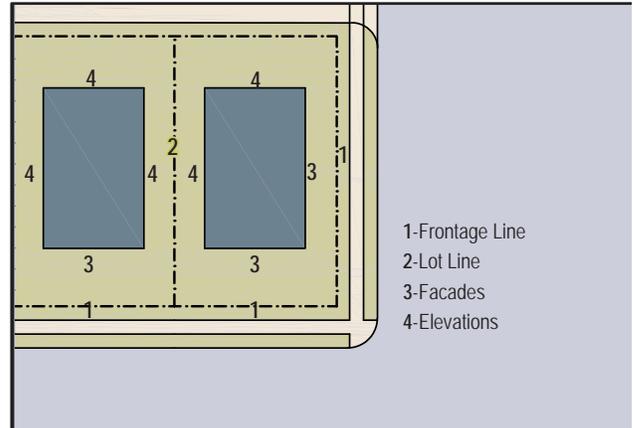
c. BUILDING DISPOSITION



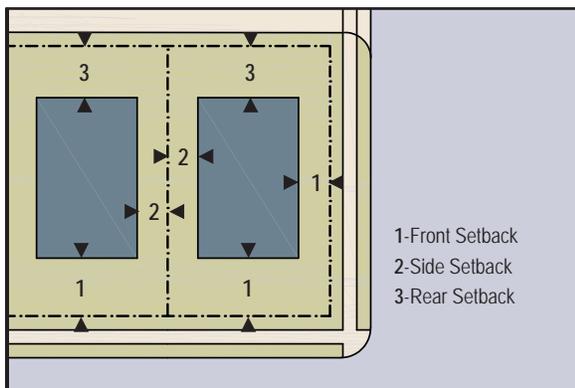
d. LOT LAYERS



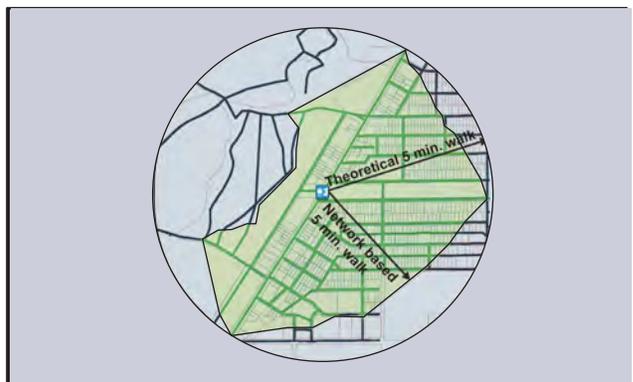
e. FRONTAGE & LOT LINES

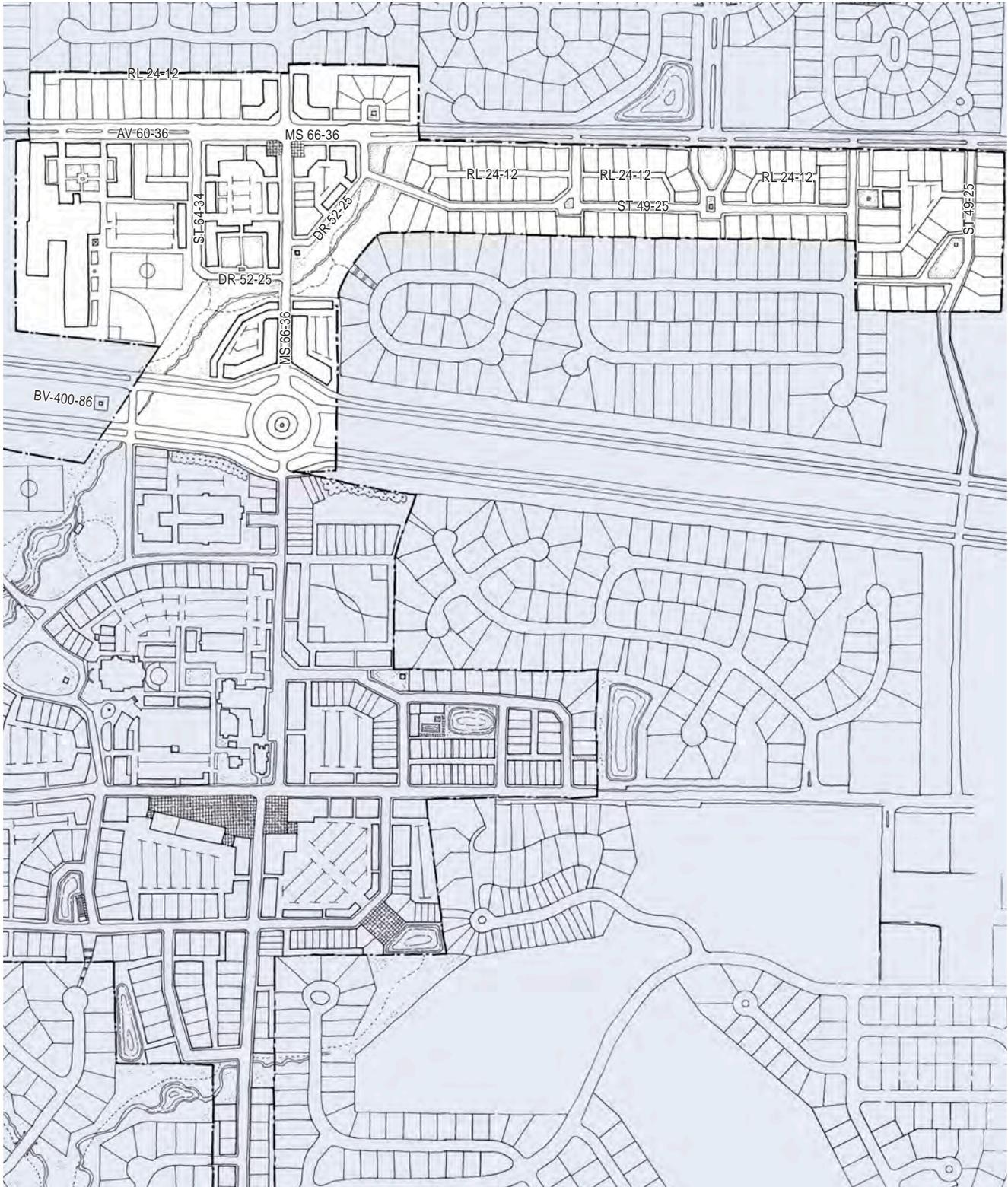


f. SETBACK DESIGNATIONS



g. NETWORK PEDESTRIAN SHED





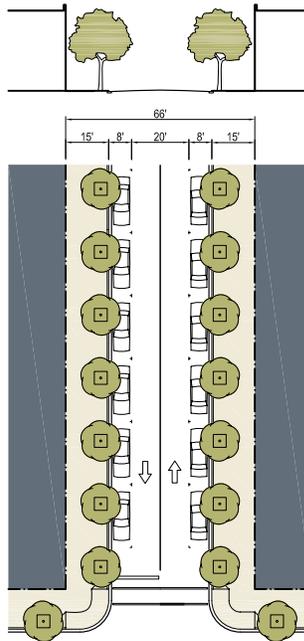
NOTE: Thoroughfare assignment plans are illustrative and subject to frequent calibration. Official copy maintained by the office of the Town Architect

KEY ST-57-20

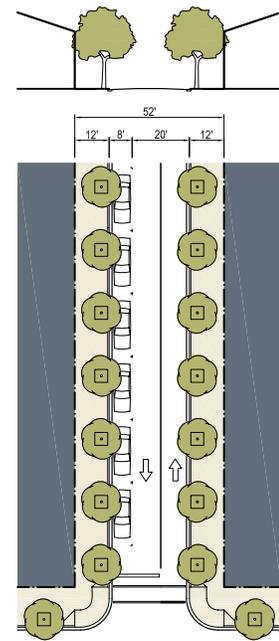


THOROUGHFARE TYPES

- Parkway: PW
- Boulevard: BV
- Avenue: AV
- Commercial Street/Main Street: CS/MS
- Drive: DR
- Street: ST
- Road: RD
- Rear Alley: RA
- Rear Lane: RL
- Bicycle Trail: BT
- Bicycle Lane: BL
- Bicycle Route: BR
- Path: PT
- Transit Route: TR



MS-66-36



MS-52-28

Thoroughfare Type
Transect Zone Assignment
Right-of-Way Width
Pavement Width
Movement
Design Speed
Pedestrian Crossing Time
Traffic Lanes
Parking Lanes
Curb Radius
Public Frontage Type
Walkway Type
Planter Type
Curb Type
Landscape Type
Transportation Provision

Main Street - MS
T6, T5, T4
64 feet
34 feet
Free movement
25 MPH
10 seconds
2 lanes, two-ways
Both sides @ 8 feet marked
10 feet
Gallery, Arcade, Shopfront & Awning, Stoop, Forecourt, Terrace
15 foot sidewalk
Tree well
Curb
Trees @ 30' o.c. avg.
Bicycle Route, Transit Route

Main Street - MS
T6, T5
52 feet
28 feet
Free movement
25 MPH
8 seconds
2 lanes, two-ways
One side @ 8 feet marked
10 feet
Gallery, arcade, Shopfront & Awning, Stoop, Forecourt, Terrace
12 foot sidewalk
Tree well
Curb
Trees @ 30' o.c. avg.
Bicycle Route, Transit Route

*Pavement width measurements shown are from the back-of-curb.

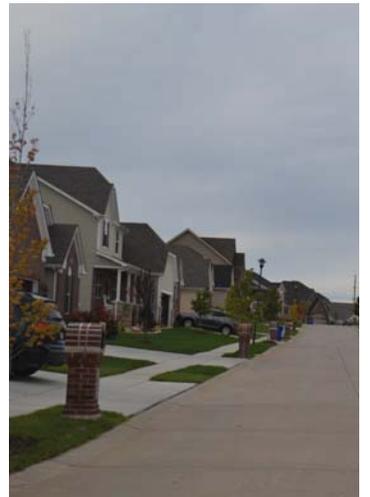
APPENDIX D

CITY OF DARDENNE PRAIRIE
MISSOURI



Dardenne Prairie Comprehensive Plan

MARCH 12, 2014



KEC

Kehoe Engineering Company, Inc.

VI. TRANSPORTATION PLAN

Rapid growth in St. Charles County, Missouri, has created greater demands on public transportation facilities throughout much of the county. Many public facilities have undergone significant improvements to provide for the increasing demands from a growing population. The City of Dardenne Prairie's future road system will be no exception. Multiple residential developments have occurred within the City's boundaries already and many more are expected.

Additionally, it is expected that additional commercial and industrial land will develop in order to serve the City's growing population. The planning of additional roads and interchanges is necessary to meet future needs of both local and commuter traffic flows.

Existing Road System

The existing road system in Dardenne Prairie consists primarily of the following two-lane roads: Bates Road, Feise Road, Hanley Road, Henning Road, McCluer Road, Post Road, Stump Road, Weldon Spring Road, and Missouri Highway N. Portions of these roadways have been improved and upgraded in accordance with the City's Transportation Plan; however, significant deficiencies still exist. Highway N carries the bulk of the traffic through the City of Dardenne Prairie with considerable

traffic at the junction of Highway N and Interstate 64 (U.S. Highway 40/61).

The Missouri Department of Transportation (MoDOT) recently completed the upgrade of U.S. Highway 40/61 to a full controlled-access status as Interstate 64. Additionally, MoDOT is currently building Missouri Route 364, which will be a four-lane limited access highway from Interstate 270 in St. Louis County (known there as Page Avenue) to Interstate 64/U.S. Highway 40/61 in St. Charles County. The proposed route will take the highway through the northern portion of the City of Dardenne Prairie. The construction of Route 364 Phase 3 started in May 2013, and is expected to be completed by late November 2014.

Road Classification

The City's existing roads can be categorized by the volume and type of traffic each carries and the function each performs. The roads in the City of Dardenne Prairie can be classified as principal arterials, minor arterials, and collectors. Principal Arterials are roads that carry the majority of the trips entering and leaving the urban area.

The principal arterial road for moving traffic through Dardenne Prairie is Highway N. In the future, Highway 364 will fit this category.

Minor Arterials

Minor arterials are roads that provide direct interconnection to the principal arterial system. Within the City of Dardenne Prairie, the minor arterials are: Bates Road, Feise Road, Hanley Road, Henning Road, McCluer Road, Post Road, Stump Road, and Weldon Spring Road.

Collectors

The remaining roads and streets can be considered collectors. These channel traffic into the minor and principal arterials.

Transportation Improvement Plan

The City of Dardenne Prairie has previously developed a comprehensive plan for extension, improvement and maintenance of its roads and streets. That plan has been implemented effectively over the last several years through multiple projects including the following:

By the City of Dardenne Prairie:

- Bates Road Phase I & II,
- McCluer Road
- Henning Road Phase I & II,
- Feise Road Extension II
- Post Road Realignment

By St. Charles County:

- Hanley Road
- Feise Road

By the city of O'Fallon:

- Bryan Road Extension

Through Private Development:

- Feise Road Extension
- Highway N
- Merz Farm Lane
- West End Loop
- La Le Drive
- Technology Drive
- BaratHaven Boulevard

Most collector streets in the City have been upgraded from narrow two-lane streets to three-lane roadways. The City shall continue to revise and implement its transportation plan through identifying and preserving roadway corridors, utilizing available transportation funding sources for new improvement projects, working closely with MoDOT and St. Charles County Government Plans, evaluating traffic movement throughout the City, and generally seeking to enhance transportation for its citizens. New subdivisions shall be considered when planning new thoroughfares to ensure dedication of sufficient rights-of-way to provide for future street widening. Subdivision developers shall be required to provide a portion of the cost of improving affected roads and streets. The improvements shall include widening and subdivisions shall be planned in such a way as to avoid steep grades, which produce runoff, erosion, or flooding problems.

The City of Dardenne Prairie currently contracts with St. Charles County for street and storm sewer maintenance and snow removal services. The City should

investigate the benefits and costs of establishing its own public works department to provide these services. Under the current contract, the County Highway Department responds to City-identified maintenance needs on all City streets and storm sewer system and provides snow removal services as a part of

County roadway operations. Under this contract, the City is able to maintain City roadways using a 5-year maintenance plan that includes scheduled crack sealing, seal coating, culvert and ditch cleaning, slab and joint replacement, bridge maintenance and various unscheduled repair and maintenance items.

Goals and Objectives

Goal: Upgrade the roadway system to provide a safe and adequate system of thoroughfares for the City of Dardenne Prairie's citizens.

Objective 1: Review the present road network including current improvements to determine its adequacy for future development.

Objective 2: Continue to preserve identified corridors and require the dedication of right-of-way from developers.

Objective 3: Monitor and coordinate with MoDOT's regional plans to ensure compatibility with Dardenne Prairie's transportation plan.

Objective 4: Work with surrounding municipalities and government entities (e.g., East-West Gateway Coordinating Council) to identify various transportation needs, corridors and alternative modes.

Objective 5: Continue to seek alternative or innovative funding sources for needed road improvement projects.

Goal: Provide for the preservation and maintenance of the roadway system within Dardenne Prairie.

Objective 1: Review the City's public maintenance contract with St. Charles County through their Highway Department to coordinate with their plans, policies, and procedures and evaluate the possible development of an independent City public works department.

Planned Transportation Improvement Projects

The following table summarizes the planned transportation improvement projects. Funding for these projects will be requested from St. Charles County, private

development, MoDOT and East/West Gateway as warrants. Dardenne Prairie will participate in funding, as funds are available. The Board of Alderman will set priorities on a yearly basis. These planned transportation improvement projects are shown in Figure 8 of the Appendix.

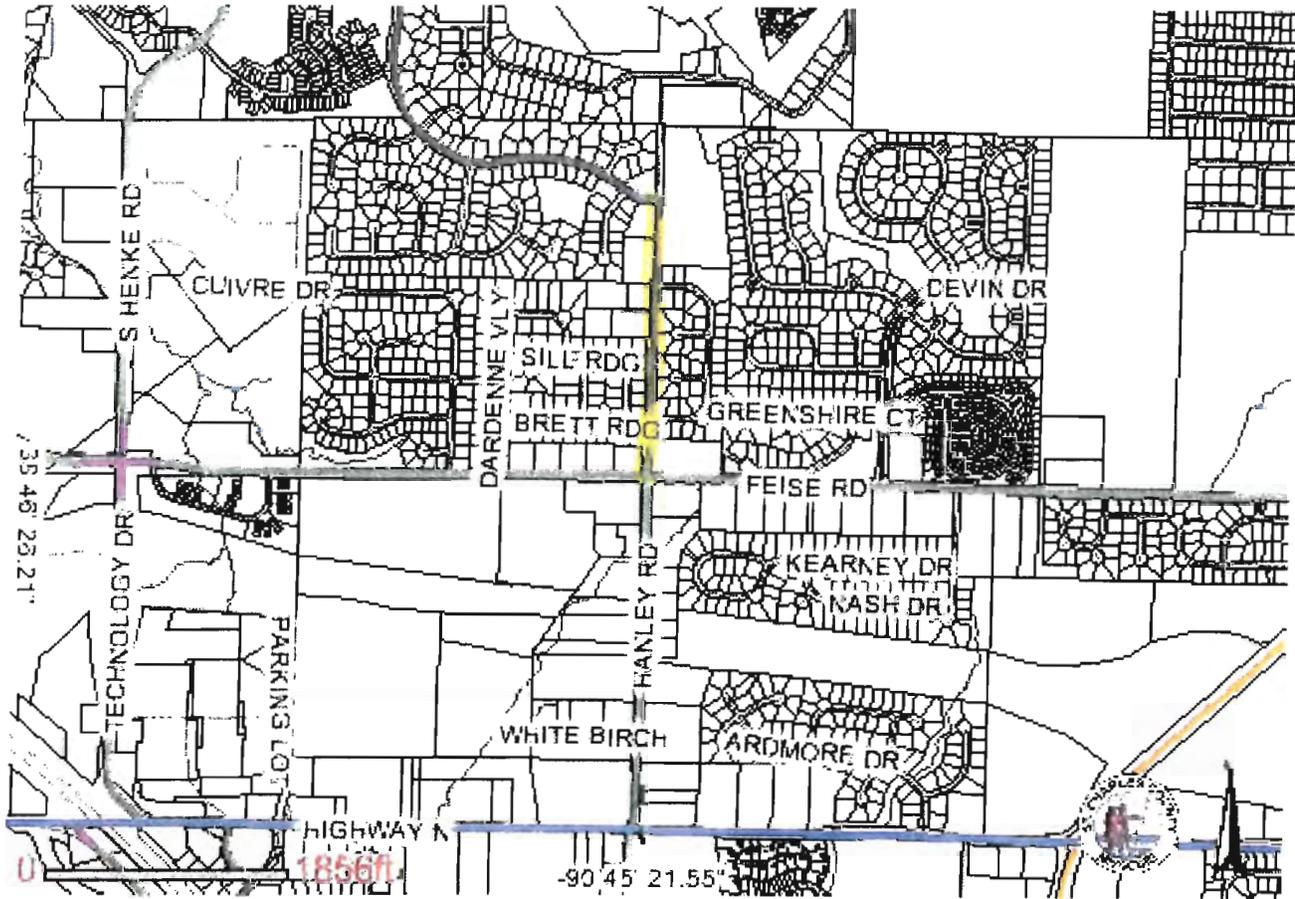
Table 9. Planned Transportation Improvement Projects.

No	Project Name	Length (feet)	Location
1	Hanley Road	2,300	Feise Road to Pleasant Meadow Drive
2	Hanley Road On-Street Parking	2,700	Hanley Road (Highway N to Feise Road)
3	A.D.A. Compliant Facilities Upgrades	-	City-Wide
4	Feise Road Sidewalks	1,000	Stonewall Creek Drive to Dardenne Woods Drive
5	Stump Road	2,000	Highway N to Feise Road
6	Highway N Sidewalks	5,000	7400, 7700 & 7800 Block
7	Weldon Spring Road	7,200	Technology Drive to Fieldstone Farms Drive
8	Highway N	9,500	Stump Road to Highway K
9	North Outer 364 Extension	4,100	Hanley Road to Bryan Road
10	Highway N On-Street Parking	5,800	Highway N (Merz Farm Lane to Bryan Road)
11	Post Road	4,200	Technology Drive to Highway N



Information Systems Department
 Geographic Information Systems
 201 N. Second Street
 St. Charles, MO 63301

St Charles County TIP
 Hanley Road Reconstruction



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- | | | | |
|--|---|--|-----------------|
| | Railway | | Parcels |
| | Thoroughfare Plan line | | Roads |
| | 2 Lanes / 60ft Road
Width / 145ft
Intersection Width | | Streams |
| | 3 Lanes / 60ft Road
Width / 175ft
Intersection Width | | County Boundary |
| | 4 Lanes / 90ft Road
Width / 190ft
Intersection Width | | |
| | 5 Lanes / 100ft Road
Width / 205ft
Intersection Width | | |
| | 5 Lanes / 120ft Road
Width / 205ft
Intersection Width | | |

The preparation of this document was financed in part by the United States Department of Transportation through the Federal Transit Administration, the Missouri Department of Transportation, and the Illinois Department of Transportation. The contents of this report reflect the opinions, findings and conclusions of the author. The contents do not necessarily reflect the official views or policies of the funding agencies.

LEGACY 2035 BACKGROUND

Transportation Planning and Public Policy

Legacy 2035 is the fourth major update of the metropolitan transportation plan that was initially adopted in 1994 by the chief local elected officials of the bi-state St. Louis region. Built upon the foundation established in the 1994 plan and subsequent updates, *Legacy 2035* is a long-range vision for how our region's surface transportation system will develop over the next three decades.

The Board of Directors of the East-West Gateway Council of Governments – the region's federally designated Metropolitan Planning Organization (MPO)—has the responsibility to oversee the development of short- and long-range transportation plans for the region, and to select the capital projects and operational initiatives that will qualify for federal funds to best carry out the goals and objectives of these plans. The MPO serves in this capacity through certification from the U.S. Department of Transportation and under joint agreements between the states of Missouri and Illinois and the eight counties of the region: the City of St. Louis, St. Charles, St. Louis, Franklin, Jefferson, Madison, Monroe and St. Clair counties. The metropolitan transportation plan provides the planning and investment framework that guides how decisions are made about the region's surface transportation system. Every transportation project in the region financed with federal funds must be included in *Legacy 2035*, or be consistent with the principles of the plan.

The development of *Legacy 2035* was prompted in part by recent changes in federal transportation policy. In August 2005, Congress passed the Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) just months after the Council had adopted the previous metropolitan, or long-range, transportation plan. SAFETEA-LU maintains many of the core policies and programs initially established in

the pivotal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and its successor the Transportation Equity Act of the 21st Century of 1998 (TEA-21). SAFETEA-LU retains a primary focus on preservation of the existing system first, and maintains the requirement of fiscal constraint, which emanates from principles of responsible governance, and of coordinated intermodal planning. These are all important principles that significantly departed from previous policies that primarily focused on expanding roadway capacity and completing the Interstate system.

SAFETEA-LU builds upon those principles, but it also includes a number of new provisions. The U.S. Department of Transportation issued federal guidance early in 2006 requiring that all metropolitan transportation plans, and transportation improvement programs become compliant with the new law by July 1, 2007. These new provisions have been addressed through the development of *Legacy 2035*. Following the adoption of *Legacy 2035*, the metropolitan transportation plan will be updated every four years.

Regardless of the legal purpose for the plan, each update provides an opportunity to re-evaluate regional transportation policies and practices, and to develop a plan that reflects current understanding of the region's transportation investment needs and financial realities. *Legacy 2035* carries forth the spirit and direction of previous plans by recognizing that the central purpose of transportation investment is to improve the quality of life for citizens of the region. Within this context, transportation is recognized not as an end itself, but rather the means of accomplishing our region's social, economic, and environmental goals.

Regional Goals

Legacy 2035 extends its vision over a 28-year horizon. Although there are many uncertainties about the future, one thing will remain constant—the citizen’s desire for a high quality of life. In developing a long-range plan it is necessary that policymakers, citizens, and regional planning partners consider past trends, current realities, and future possibilities, and anticipate what solutions will be necessary to address future transportation needs. The adopted regional goals that guide the plan follow.

- strong position in the national and global marketplace, ensured through strategic economic development, competitive employment opportunities, a well-trained workforce, and responsible asset management.
- sustainable and growing economy grounded in the wise and coordinated use of physical, environmental, social, and agricultural resources.
- clean and healthy environment.
- Safe neighborhoods, communities, and thoroughfares
- Resources for learning and personal development, accessible at every point of the life cycle.
- Varied and valued outlets for recreation and cultural expression.
- A growing, diversified population, with equity, choice, and opportunity for all citizens.
- Efficient and balanced patterns of growth and development that respect the land, the citizenry, the history, and the strategic location of the St. Louis region.

Framework for Decision-Making

Simply stated, the regional transportation planning process is a problem solving exercise. The process begins by identifying transportation problems, analyzing those problems, carefully considering a range of solutions to address those problems, and then selecting and implementing the most cost-effective and appropriate solutions. The Council uses a multi-step, integrated decision-making process in which the procedures for planning and the criteria for selecting projects all link back to the policies and goals set out in the regional transportation plan. This process has six major integrated components: the regional transportation plan, transportation project planning, regional project selection, project implementation, project monitoring and performance evaluation, and public engagement. The components of the process are illustrated in Figure 1-1.

Legacy 2035 is the keystone of the transportation planning process. As such, the plan articulates the region’s priorities and creates the overarching planning framework that will guide future transportation decisions. Although the plan is required by federal law, the ultimate function of the plan is not regulatory. The plan’s fundamental purpose is to ensure that public resources are used in ways that best meet the economic, community, and environmental needs of the St. Louis region.

The Transportation Improvement Program (TIP) is the short-term implementation element of the *Legacy 2035*. This document is updated every year and covers a four-year period. All projects selected for inclusion in the TIP must be consistent with the priorities of the long-range plan. The current TIP covers the fiscal years 2007-2010 and includes projects costing \$2.8 billion in federal, state, and local funds. To ensure that public resources are being spent efficiently, the Council and its partners monitor progress in the implementation of scheduled projects over the duration of the TIP.

Figure 1-1
Transportation Planning Process

Regional (Metropolitan)

Transportation Plan

- Goals and Objectives
- Planning Framework
- Needs Assessment
- Project and Corridor Improvements
- Financial Capacity
- Air Quality Conformity

Community Engagement

- Public Information
- Consultation
- Process Evaluation

**Transportation
Project Planning**

- Subarea Studies
- Corridor/Planning Studies
- Special Projects

Regional Project Selection

(Transportation Improvement Program)

- Consistent with Plan
- Regional Selection Criteria
- Financial Plan

**Management Systems
Project Monitoring and
Performance Evaluation**

Project Implementation



To ensure consistency between the Council's plans and programs, six focus areas were established to help align each step of the planning process with the goals of the regional plan. The inherent assumption in using the focus areas is that any progress in those areas will contribute to the achievement of the region's goals. The six focus areas are:¹

- *Preservation of existing infrastructure*
- *Safety and security in travel*
- *Congestion Management*
- *Access to opportunity*
- *Sustainable development*
- *Efficient movement of goods*

Measuring the Performance of the Plan

Each year hundreds of millions of dollars are invested in the transportation system with the intent of moving the region closer to achieving the plan's goals and policy priorities. Measuring the performance of the system is critical to evaluate how well these goals and priorities are being achieved. Performance measures are indicators of effectiveness related to important issues or concerns of those making investment decisions. By developing regional measures of performance, planners and decision makers are also able to evaluate the impacts of planned improvements to ensure that the region's investment strategy supports regional goals and objectives, and to measure performance outcomes over time. This is referred to as performance-based planning.

Performance-based planning improves decision-making by increasing the linkage between planning goals and investment decisions. By incorporating the results of performance monitoring into the planning process, it informs decision-makers of the how the region's transportation system is performing today, and of tradeoffs between different investment alternatives, thereby providing a basis for more strategic short-and long-term investment decisions.

There are many challenges to developing a comprehensive performance monitoring process. The initial challenge is defining a meaningful set of measures that provide the most relevant information to the public and decision makers. A study on performance measurement conducted for the Council by Cambridge Systematics, Inc. in 1998 provided a basis for establishing that process in St. Louis. Perhaps a greater challenge, however, is developing the data to support that effort.

One of the primary tools for evaluating system performance and the effects of planned investments is the travel demand model. The Council recently completed a major overhaul of this planning tool. To support this effort, the Council commissioned household travel and on-board transit surveys in 2002. The household survey examined the travel behavior of 5,000 households in the region; the on-board survey examined the trip-making behavior of 15,000 transit riders. These surveys are a rich resource of information for understanding regional travel patterns, and they provided the data necessary to build a new generation of travel demand models. The Council has also invested in the development of a new state of the art land use evolution and impact assessment model, locally termed the Gateway Blueprint Model, which is integrated with the travel demand model. The Blueprint model will be useful for evaluating the social, economic, and environmental impacts of various transportation investment decisions. These new modeling applications will significantly enhance the Council's ability to produce meaningful information to support regional planning and decision-making.

¹ *Transportation Redefined* included Resource Conservation as a seventh focus area. It is now incorporated in the Sustainable Development focus area.

A *State of the Transportation System* report was prepared in 2005, in conjunction with the previous plan. This report summarizes the findings of a comprehensive evaluation of how the existing transportation system is performing in meeting the needs of the region relative to each of the six focus areas used to organize decision-making. Key performance measures included in the report were updated to support the development of *Legacy 2035*. The *State of the Transportation System* report will be updated regularly to support the Council's long- and short-range planning efforts.

Citizen Engagement

Citizen engagement is another key element of the Council's planning process. One the most fundamental principles of planning is for all those who have a stake in the transportation system—commuters, community residents, business representatives, students, transit riders, cyclists and pedestrians, truck drivers, public safety officials, consumers of health and human service, and others—to be involved in significant and ongoing ways in the process through which transportation problems are identified and solutions developed. The Council has become increasingly proactive in engaging citizens in regional problem-solving activities over the last decade. In 2004, the Council adopted an updated citizen engagement strategy. The strategy is currently being updated to reflect the Council's most current activities. This strategy hinges on four important principles:

- Citizens should know how decisions are made about the investment of tax dollars in public projects.
- Individuals and communities impacted by the outcome of regional decisions want to have their opinions and perspectives taken into consideration.
- Planners cannot maintain current and relevant knowledge about regional problems without learning from citizens directly affected.

- The best plans are those that reflect a reasonable balance between local and regional priorities, such as equity, cost-effectiveness, and metropolitan growth.

The strategy has four essential components: communication, consultation, cooperation, and community-based outreach, in addition to an evaluation component.

The communication component focuses on utilizing the Council's publications to get the word out to the regional community. Those publications, the quarterly newsletter *Gateways* and the weekly emailed or faxed Local Government Briefings are widely distributed. The Council's website is also an effective tool to reach citizens throughout the region.

Consultation consists of stakeholder interaction with the Council's standing committees, public meetings held for plan updates, and a "We're Listening" tour across the region. To inform the development of *Legacy 2035* consultation efforts were expanded to include a much more diverse group of stakeholders than had previously been involved in the process to address a variety of issues, including developing long-term strategies for mitigating environmental impacts of infrastructure investment; improving consistency between transportation improvements and state and local planned growth and economic development; identifying needs associated with movement of freight; and improving connectivity between the surface transportation system and regional intermodal assets.

Cooperation refers to joint planning activities in which citizens play an integral role, such as has occurred in the development of the Bicycle and Pedestrian Plan, the Regional Transportation Safety Initiative, the Gateway Blueprint Initiative, and the Coordinated Human Services Public Transportation Plan, which all help to inform ongoing planning activities.

Community-based outreach strives to include groups of citizens who have been historically under-served by regional systems. Those groups include low-income workers and job seekers, older

adults, and persons with disabilities. In 2004, the Council contracted with the Starkloff Disability Institute to lead a series of activities to see that the needs and perspectives of individuals with disabilities are reflected in regional policies and actions identified in the plan. The Council is currently taking the lead on developing a Coordinated Human Services Public Transit Plan. This plan will build upon the 2004 Starkloff study, broadening its focus to identify the region's public transportation needs relative to transit dependent low-income households, as well as the disabled and mobility challenged.

A Legacy for the Future

The primary goal of *Legacy 2035*, as the name implies, is to create a legacy for the St. Louis region that provides future generations with the foundation they need to sustain economic growth, increase social equity, preserve valuable environmental resources, and improve quality of life.

The following strategies will guide future Council efforts in the area of regional safety and security:

- Work with partners to implement a systematic plan to improve regional transportation safety, focusing on engineering, education, enforcement and emergency response while integrating the IDOT and MoDOT comprehensive safety plans
- Promote education and advertising strategies to change unsafe driving behavior
- Invest in cost-effective safety improvements to eliminate sub-standard conditions in high crash locations and corridors
- Develop a training program to assist communities in solving local transportation safety problems
- Develop a Regional Emergency Coordination Plan that articulates policies and procedures for resource sharing and cooperative response to large scale multi-jurisdictional emergency incidents, including evacuation plans
- Maintain a medical communications center to support and coordinate communications among hospitals, EMS, public health and emergency managers as needed
- Support emergency patient tracking system to identify and track patients from the field to the hospital, permitting more efficient use of EMS resources, and balancing patient loads at area hospitals
- Support a Terrorist Early Warning Center to coordinate detection and prevention of intentional criminal acts and to maintain inventory and plan for protection of critical infrastructure

cumulative effects of development, past, current and future, and provide a means for developing ecosystem based strategies for mitigating development impacts in the future. The Council will continue to engage resource agencies and broaden stakeholder involvement in future long-range planning efforts with the intent of improving the sustainability of development practices in the region.

The following strategies will guide the Council's efforts in the area of sustainable development:

- Integrate arterial roadway design techniques, developed through the Great Streets Initiative, into transportation planning and programming processes to encourage better integration of streets within communities, incorporate access management and context sensitive strategies, accommodate various modes of travel, to enhance mobility for all system users
- Utilize the Digital Design Guide to education and inform to local governments on strategies to create and maintain great streets
- Continue to promote ridesharing, employer-based transit subsidy programs, and other demand management strategies
- Promote the use of existing transit systems as an alternative to highway use
- Promote transportation and development actions that reduce the need for travel, especially single occupant vehicle travel
- Encourage high-density, mixed use development at appropriate MetroLink stations
- Emphasize the linkage between land use and transportation through regional dialogue using the Regional Blueprint process
- Encourage and support comprehensive community planning among local governments by providing tools and data for analysis, educational information on best practices in sustainable development, and other resources
- Continue efforts to qualify major transit capital projects for federal New Starts funding
- Dedicate Congestion Mitigation and Air Quality funds to finance transportation control measures and other projects that promise the highest reductions in congestion and vehicle emissions in the most cost-effective manner
- Require project sponsors to explicitly consider bicycle, pedestrian, and transit accommodations in developing projects for Transportation Improvement Program funding including strategies outlined in the St. Louis Regional Bicycle and Walking Plan and East-West Gateway's Great Streets Program
- Work cooperatively with federal, state, and local resource agencies with regulatory and management responsibilities over natural, cultural, and historic assets in effort to integrate our planning efforts to develop long-range mitigation strategies to avoid, minimize, and mitigate impacts of infrastructure projects
- Develop a Regional Environmental Framework that identifies and prioritizes relative importance of ecological, historical, and cultural assets

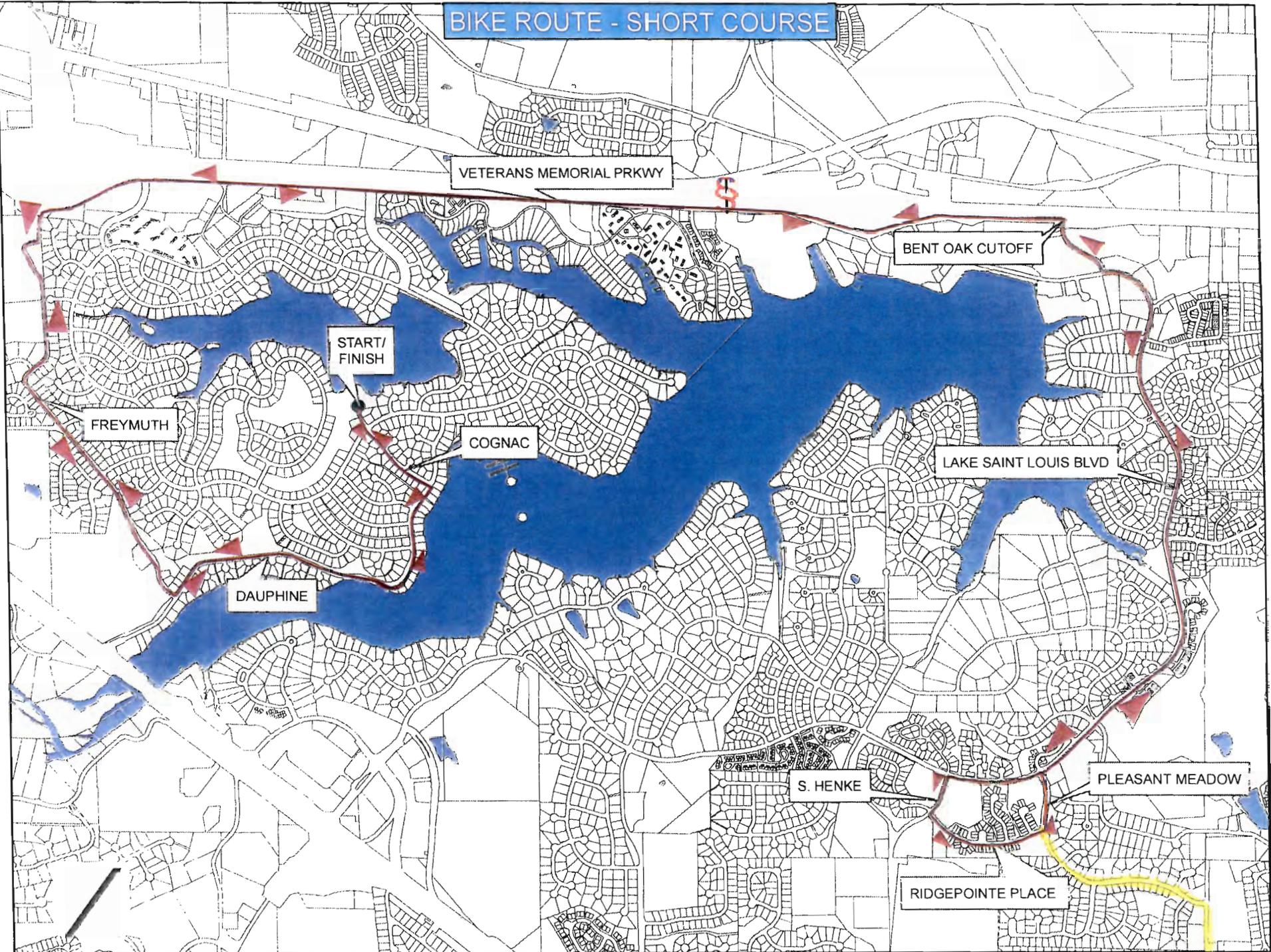
Preserving the system now and in the future will require continuing the region's dedication to this goal. Regional collaboration will be key, particularly as the needs arise to undertake major reconstruction efforts. Major reconstruction projects will require significant coordination and costly mitigation to mitigate impacts for travelers. This year, MoDOT began the reconstruction of I-64 between Spoede Road and Kingshighway Boulevard, which traverses the heart of the St. Louis region. The I-64 reconstruction project is the largest reconstruction project, in both scope and cost, in St. Louis history. It is the first time a design-build approach has been implemented in Missouri. The goal for the project is to complete the project within a four-year timeframe within a \$535 million budget. Many of the lessons learned through the implementation of the I-64 reconstruction project will set precedent for future projects of similar size that will inevitably arise as the system ages over time.

Nearly 70 percent or X Dollars of the investments identified in *Legacy 2035* are dedicated to maintenance, rehabilitation, and reconstruction of existing highways, bridges, and transit assets. Maintaining a progressive approach to management of the region's transportation system is critical to continue improving their condition. Deferring this responsibility due to the increasingly tight fiscal environment is not a feasible option. Preservation of the existing system is fiscally responsible, and will remain the basic tenet of the transportation planning and programming process now, and in years to come.

The following strategies will guide future Council efforts in the area of preservation:

- Invest what is needed to continuously improve the condition of pavements and bridges on the state highway systems and to adequately maintain regional transit assets
- Give priority to preservation in the programming of Suballocated STP funds to encourage the consistent improvement of locally-owned roads and bridges
- Accelerate the rehabilitation of the arterial road system
- Encourage local governments to develop comprehensive asset management program to track conditions of transportation assets maintained by local entities

BIKE ROUTE - SHORT COURSE



VETERANS MEMORIAL PRKWY

BENT OAK CUTOFF

START/
FINISH

FREYMUTH

COGNAC

LAKE SAINT LOUIS BLVD

DAUPHINE

S. HENKE

PLEASANT MEADOW

RIDGEPOINTE PLACE

APPENDIX E



Picture #1 (Looking North at the intersection of Hanley and Feise Roads) – This proposed project will complete the north leg of the Hanley and Feise Road intersection (including left turn lane, pedestrian crosswalk, handicap ramp and pedestrian crossing signal heads).



Picture #2 (Looking North at the intersection of Hanley Road and Brett Ridge Drive) – This project includes reconstructing the two existing 10.5-foot wide travel lanes with two new 12-foot wide travel lanes. Adjacent to each travel lane will be a 4-foot wide bicycle lane, a 2-foot wide concrete curb/gutter section, and a 5 foot wide sidewalk on both sides of the roadway.



Picture #3 (Looking North at the intersection of Hanley Road and Barrington Lake Estates) – An enclosed storm sewer system will be designed to handle storm water runoff.



Picture #4 (Looking North at the intersection of Hanley Road and Pleasant Meadow Drive) – The addition of 4-foot wide bicycle lanes will tie into a network of bicycle trails which exist in the neighboring community of Lake St. Louis as well as provide an extension of the Dardenne Prairie Uptown development area.

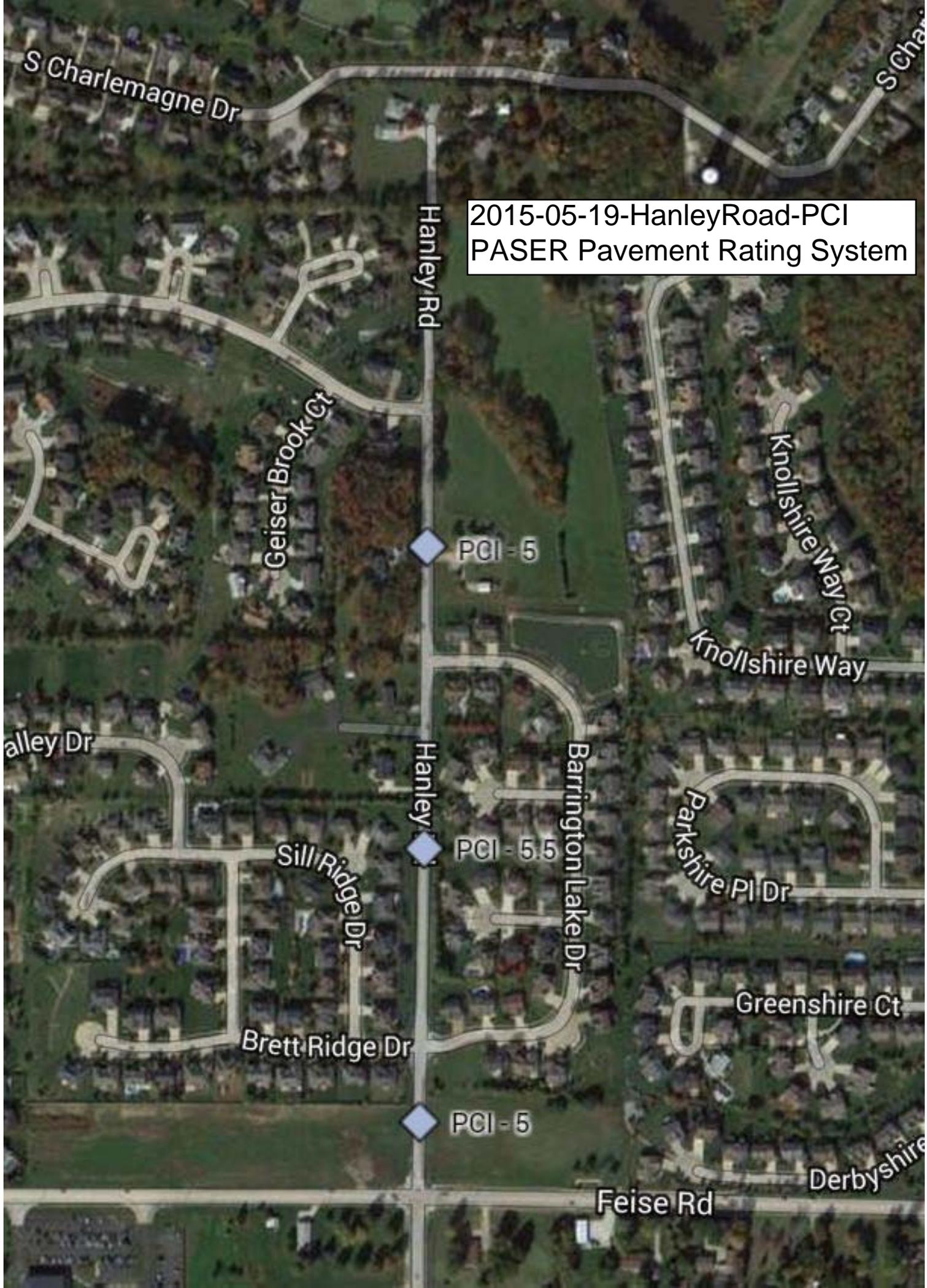


Picture #5 (Typical existing roadside ditch along Hanley Road) – Replacing the existing ditches with an enclosed storm sewer system is one of the safety improvements proposed with project.



Picture #6 (Typical existing roadside conditions at Hanley Road) – By adding sidewalks on both sides of the road will help eliminating this potential hazard to errant vehicles, and help limit pedestrian/vehicle conflicts.

2015-05-19-HanleyRoad-PCI
PASER Pavement Rating System



APPENDIX F

02/13//2015 L.R. Kehoe - A follow-up inquiry made with the St. Charles County Sheriff's Department in Feb. 2015, revealed no additional traffic crashes in the proposed road improvement area.

Luke Kehoe

From: McGuire, Craig <CMcGuire@sccmo.org>
Sent: Friday, March 09, 2012 1:45 PM
To: Luke Kehoe
Subject: RE: Dardenne Prairie - Hanley Road Traffic Accident Reports

Sir:

Checking our reports I was only able to locate one accident. It occurred 4-12-2011 at 1979 hanley rd which I believe is north of feise but I do not know how far north it is. It was non-injury report number 11-1728. I checked from 1 january 2009 until todays date. There is the possibility that mshp may have worked an accident during this time frame at this location but the chances are very slim.

From: Luke Kehoe [<mailto:engineer@dardenneprairie.org>]
Sent: Friday, March 09, 2012 10:32 AM
To: McGuire, Craig
Subject: Dardenne Prairie - Hanley Road Traffic Accident Reports

Lieutenant McGuire,

I am preparing an application for funding for the improvement of Hanley Road by the City of Dardenne Prairie. The project limits are Feise Road to Pleasant Meadow Drive.

Any available accident data (police reports) for the years 2009-2011 are a required part of the application.

Please direct me to the correct person for fulfilling a request for this information.

Thank you,

Luke R. Kehoe, P.E., CFM, LEED AP
City Engineer
Kehoe Engineering Company, Inc.

City of Dardenne Prairie

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Dardenne Prairie, Missouri 63368
engineer@dardenneprairie.org
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Tel: (636) 561-1718 City Hall
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APPENDIX G

GENERAL NOTES:

- All proposed traffic signal and street lighting equipment, materials, and construction methods shall conform to the requirements and specifications described in the latest version of the St. Charles County Standard Specifications for Arterial Highway Construction, 2006.
- Suggested signal timings to be provided by the Engineer
- Pedestrian indications shall be LED filled symbols with Count Down Timer
- Existing underground (U/G), overhead (OHP) utilities and drainage structures have been plotted from available information and therefore, their locations must be considered approximate only. It is the responsibility of the individual contractors to exactly locate each utility before actual construction.
- 2" Rigid Steel Conduit shall be furnished and installed by Contractor from the base of the Secondary Service Point to the Power Supply. Power Cable (1c#8) shall be coiled and left at base of Secondary Service Point for hook-up by Cuivre River Electric Cooperative. This work shall be considered subsidiary to the bid item "Power Supply"
- All vehicular traffic heads mounted on mast arms shall use Pelco Astro-Brac, or City approved equal
- All backplates shall be louvered.
- Controller assembly shall be NEMA TS2 Type 1. All components must be NTCIP Compliant. MMU shall have an LCD display. Police door manual hand control and side mounted cabinet battery backup system shall be included.
- All signal post bases shall be flush with proposed sidewalk finished grade. Electrical contractor shall be responsible for coordination with paving contractor. All signal poles and pedestals shall include a decorative cast base
- All new mast arms, posts, and pedestals shall be powder coated ebony black by the manufacturer.
- Contractor shall coordinate with Owner's representative prior to installing ADA compliant push buttons.
- See specifications for details and dimensions of the City of Dardenne Prairie's logo to be added to signs S3 and S4



DECORATIVE CAST BASE

STERNBERG, BARRINGTON SERIES (8501-RTS), OR APPROVED EQUAL FINISH SHALL BE PAINTED EBONY BLACK BY MANUFACTURER TO MATCH PAINTED POLES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SIZE OF EXISTING POLES. CAST BASE SHALL BE FLUSH WITH EXISTING SIDEWALK.

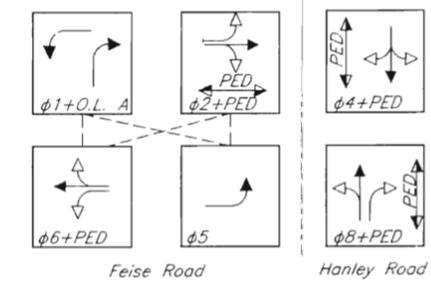
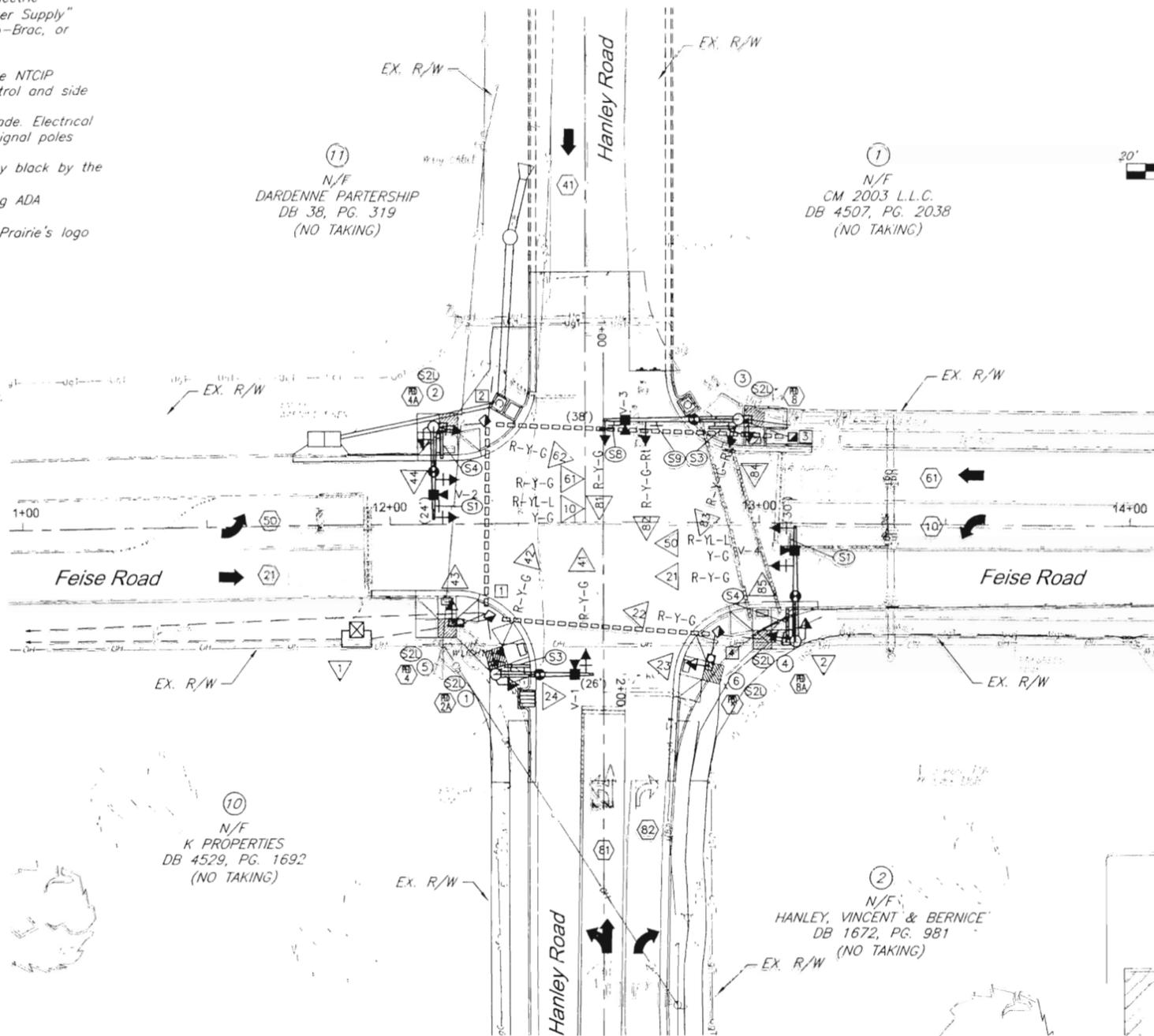
	GBA architects engineers 225 S. Main St. Suite 200 O'Fallon, Missouri 63366 636.240.2444 www.gbateam.com	DATE: DECEMBER 2009 DESIGN BY: DTS DRAWN BY: KLO PROJECT NO: 11736/11737
	SHEET NO: 20 / TOTAL SHEETS: 47	
DANIEL SHANE Professional Engineer License No. 29833		
ROADWAY IMPROVEMENTS AND TRAFFIC SIGNALIZATION CITY OF DARDENNE PRAIRIE, MISSOURI		
FEDERAL PROJECT NUMBERS: CMAQ-5407(609) ARRA-ES06(037)		

VIDEO DETECTION NOTES

- Video Detection system shall be Autoscope Solo Pro, or City approved equal.
- Contractor shall coordinate video detection installation with manufacturer's representative, and meet all of their installation requirements.
- All video detection equipment, materials, mounting hardware, software, cables, or any other items required for the complete and satisfactory operation of the video detection system shall be considered SUBSIDIARY to the bid item "Video Detection"

LEGEND

- CONVENTIONAL SIGNAL HEAD WITH LOUVERED BACKPLATE
- TYPE B BASE
- TYPE C BASE
- CONTROLLER ASSEMBLY WITH PAD
- PULLBOX, PREFORMED
- DOUBLE PULLBOX, CONCRETE
- VIDEO DETECTION CAMERA
- TYPE III POWER SUPPLY (LIGHTING/SIGNAL)
- SECONDARY SERVICE POINT
- MAST ARM WITH SIGNAL HEADS, AND SIGN
- 150W HPS LUMINAIRE WITH 12' BRACKET ARM
- VIDEO DETECTION ZONE
- CONDUIT IN TRENCH
- CONDUIT PUSHED
- SIGNAL FACE NUMBER
- POST NUMBER
- DETECTOR NUMBER
- PULLBOX NUMBER
- SIGN INDICATION
- REMOVAL OF EXISTING ITEM
- LANE USE
- TO BE REMOVED
- REMOVAL OF EXISTING PAVEMENT MARKINGS TO BE REMOVED AND RELOCATED BY OTHERS
- USE IN PLACE

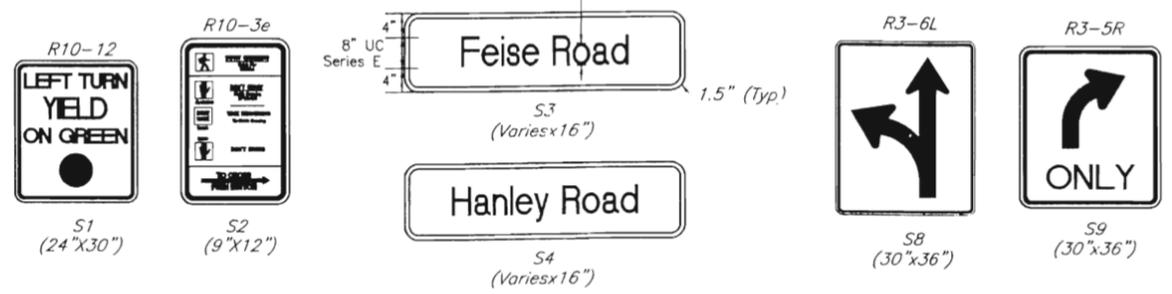


SIGNAL PHASING

--- Denotes Phases that may time concurrently.
 Ped Phases called only when actuated by push button.

CONSTRUCTION NOTES

- Secondary Service located approximately 180 feet west of controller. Power Supply to be located near Secondary Service within existing right-of-way. Exact location to be coordinated with Cuivre River Electric Cooperative.
- Contractor shall take caution when digging Pole Base 4 to avoid existing waterline running north/south across Feise Road.



SIGN DESIGNATIONS

**TRAFFIC SIGNAL PLAN
 FEISE RD AND HANLEY RD**

HCM Unsignalized Intersection Capacity Analysis
 3: Feise Road & Hanley Road

George Butler Associates, Inc.
 3/20/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	234	42	121	207	19	22	14	84	52	64	17
Peak Hour Factor	0.79	0.79	0.79	0.74	0.74	0.74	0.51	0.51	0.51	0.88	0.88	0.88
Hourly flow rate (vph)	1	296	53	164	280	26	43	27	165	59	73	19
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1					
Volume Total (vph)	1	349	164	305	43	192	151					
Volume Left (vph)	1	0	164	0	43	0	59					
Volume Right (vph)	0	53	0	26	0	165	19					
Hadj (s)	0.53	-0.07	0.53	-0.02	0.53	-0.57	0.04					
Departure Headway (s)	7.2	6.5	7.0	6.4	7.7	6.6	7.3					
Degree Utilization, x	0.00	0.63	0.32	0.55	0.09	0.35	0.31					
Capacity (veh/h)	474	524	493	531	419	489	448					
Control Delay (s)	9.0	19.0	12.0	15.7	10.3	12.0	13.5					
Approach Delay (s)	19.0		14.4		11.7		13.5					
Approach LOS	C		B		B		B					

Intersection Summary

Delay	15.1											
HCM Level of Service	C											
Intersection Capacity Utilization	45.5%				ICU Level of Service			A				
Analysis Period (min)	15											

Posted Speed = 35 mph
Design Speed = 35 mph
ADTs (Entering Volumes):
Feise EB = 4452
Feise WB = 5312
Hanley NB = 1824
Hanley SB = 1306

HCM Unsignalized Intersection Capacity Analysis
 8: Highway N & Hanley Road

George Butler Associates, Inc.
 3/20/2008

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	29	344	35	5	280	38	85	45	51	88	55	46
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.57	0.57	0.57	0.61	0.61	0.61
Hourly flow rate (vph)	32	382	39	6	315	43	149	79	89	144	90	75
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2					
Volume Total (vph)	32	421	6	357	318	144	166					
Volume Left (vph)	32	0	6	0	149	144	0					
Volume Right (vph)	0	39	0	43	89	0	75					
Hadj (s)	0.53	-0.03	0.53	-0.05	-0.04	0.53	-0.28					
Departure Headway (s)	8.6	8.0	8.8	8.2	8.3	9.2	8.4					
Degree Utilization, x	0.08	0.94	0.01	0.81	0.73	0.37	0.39					
Capacity (veh/h)	403	435	396	424	417	374	399					
Control Delay (s)	11.1	55.7	10.7	37.2	31.1	16.4	15.4					
Approach Delay (s)	52.5		36.8		31.1	15.8						
Approach LOS	F		E		D	C						

Intersection Summary

Delay		36.0										
HCM Level of Service			E									
Intersection Capacity Utilization		47.6%		ICU Level of Service				A				
Analysis Period (min)		15										

HCM Unsignalized Intersection Capacity Analysis
 3: Feise Road & Hanley Road

George Butler Associates, Inc.
 3/20/2008

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	15	297	37	105	355	71	45	52	91	48	34	6
Peak Hour Factor	0.78	0.78	0.78	0.86	0.86	0.86	0.88	0.88	0.88	0.70	0.70	0.70
Hourly flow rate (vph)	19	381	47	122	413	83	51	59	103	69	49	9
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1					
Volume Total (vph)	19	428	122	495	51	163	126					
Volume Left (vph)	19	0	122	0	51	0	69					
Volume Right (vph)	0	47	0	83	0	103	9					
Hadj (s)	0.53	-0.04	0.53	-0.08	0.53	-0.41	0.10					
Departure Headway (s)	7.4	6.8	7.1	6.5	8.4	7.4	8.0					
Degree Utilization, x	0.04	0.81	0.24	0.90	0.12	0.33	0.28					
Capacity (veh/h)	464	518	489	545	408	459	415					
Control Delay (s)	9.5	31.0	11.2	41.2	11.3	12.9	14.2					
Approach Delay (s)	30.0		35.3		12.5		14.2					
Approach LOS	D		E		B		B					

Intersection Summary

Delay	28.3											
HCM Level of Service	D											
Intersection Capacity Utilization	52.8%			ICU Level of Service			A					
Analysis Period (min)	15											

HCM Signalized Intersection Capacity Analysis

George Butler Associates, Inc.

3: Feise Road & Hanley Road

3/20/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	234	42	121	207	19	22	14	84	52	64	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.87			0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1770	1820		1770	1839		1770	1623			1796	
Flt Permitted	0.57	1.00		0.36	1.00		0.58	1.00			0.81	
Satd. Flow (perm)	1069	1820		666	1839		1089	1623			1476	
Peak-hour factor, PHF	0.79	0.79	0.79	0.74	0.74	0.74	0.51	0.51	0.51	0.88	0.88	0.88
Adj. Flow (vph)	1	296	53	164	280	26	43	27	165	59	73	19
RTOR Reduction (vph)	0	10	0	0	5	0	0	111	0	0	9	0
Lane Group Flow (vph)	1	339	0	164	301	0	43	81	0	0	142	0
Turn Type	pm+pt			pm+pt			pm+pt			Perm		
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	15.4		22.2	18.5		15.1	15.1			9.9	
Effective Green, g (s)	16.0	15.4		22.2	18.5		15.1	15.1			9.9	
Actuated g/C Ratio	0.35	0.33		0.48	0.40		0.33	0.33			0.21	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	379	607		408	736		374	530			316	
v/s Ratio Prot	0.00	c0.19		c0.03	0.16		0.00	c0.05				
v/s Ratio Perm	0.00			0.16			0.03				c0.10	
v/c Ratio	0.00	0.56		0.40	0.41		0.11	0.15			0.45	
Uniform Delay, d1	9.9	12.6		7.4	9.9		11.2	11.0			15.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	1.1		0.7	0.4		0.1	0.1			1.0	
Delay (s)	9.9	13.7		8.1	10.3		11.3	11.2			16.8	
Level of Service	A	B		A	B		B	B			B	
Approach Delay (s)		13.7			9.5			11.2			16.8	
Approach LOS		B			A			B			B	

Intersection Summary

HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	46.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Posted Speed = 35 mph
 Design Speed = 35 mph
 ADTs (Entering Volumes):
 Feise EB = 4452
 Feise WB = 5312
 Hanley NB = 1824
 Hanley SB = 1306

HCM Signalized Intersection Capacity Analysis
 3: Feise Road & Hanley Road

George Butler Associates, Inc.
 3/20/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	297	37	105	355	71	45	52	91	48	34	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.98		1.00	0.97		1.00	0.90			0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	
Satd. Flow (prot)	1770	1832		1770	1816		1770	1685			1796	
Flt Permitted	0.37	1.00		0.32	1.00		0.65	1.00			0.75	
Satd. Flow (perm)	693	1832		592	1816		1204	1685			1389	
Peak-hour factor, PHF	0.78	0.78	0.78	0.86	0.86	0.86	0.88	0.88	0.88	0.70	0.70	0.70
Adj. Flow (vph)	19	381	47	122	413	83	51	59	103	69	49	9
RTOR Reduction (vph)	0	7	0	0	10	0	0	71	0	0	5	0
Lane Group Flow (vph)	19	421	0	122	486	0	51	91	0	0	122	0
Turn Type	pm+pt			pm+pt			pm+pt			Perm		
Protected Phases	7	4		3	8		5	2				6
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	18.6	18.0		23.4	20.4		15.0	15.0				9.8
Effective Green, g (s)	18.6	18.0		23.4	20.4		15.0	15.0				9.8
Actuated g/C Ratio	0.39	0.38		0.49	0.42		0.31	0.31				0.20
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0				4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	282	687		362	772		390	527				284
v/s Ratio Prot	0.00	0.23		c0.02	c0.27		0.00	c0.05				
v/s Ratio Perm	0.03			0.14			0.04				c0.09	
v/c Ratio	0.07	0.61		0.34	0.63		0.13	0.17				0.43
Uniform Delay, d1	9.3	12.2		7.5	10.8		12.0	12.0				16.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00				1.00
Incremental Delay, d2	0.1	1.6		0.6	1.6		0.2	0.2				1.0
Delay (s)	9.4	13.8		8.0	12.4		12.2	12.1				17.7
Level of Service	A	B		A	B		B	B				B
Approach Delay (s)		13.6			11.6			12.2				17.7
Approach LOS		B			B			B				B

Intersection Summary

HCM Average Control Delay		12.9	HCM Level of Service	B
HCM Volume to Capacity ratio		0.58		
Actuated Cycle Length (s)		48.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization		52.8%	ICU Level of Service	A
Analysis Period (min)		15		
c Critical Lane Group				

