DRAFT

IDEA COMMONS

INFRASTRUCTURE DEFICIENCIES INVENTORY

City of Springfield
Department of Planning and Development

March, 2011
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INTRODUCTION

On October 4, 2010, the Springfield City Council adopted the IDEA Commons Plan as an element of the Springfield Comprehensive Plan. The plan replaces the 2006 Jordan Valley Innovation Center Activity Center Plan and provides a new direction for future planning and development efforts in support of IDEA Commons. The goal of IDEA Commons Plan is to “create a vibrant mixed-use community that is a model for innovative and sustainable development; complements Missouri State University’s initiative to expand opportunities for business development and commercialization; and supports the vision for Jordan Valley.”

Prior to developing the Plan, staff drafted a background report that provided information on recent planning and development activities, existing conditions, development challenges that hinder redevelopment. Staff used the information compiled within the background report to assist in the development of the IDEA Commons Plan.

The IDEA Commons Plan identifies several objectives and actions the City can take to help facilitate redevelopment. They can be grouped into the following categories:

1. Infrastructure deficiencies;
2. Environmental remediation;
3. Land-use regulations, and;
4. Economic development incentives

Regarding infrastructure deficiencies, a stated objective in the Plan is to “upgrade public infrastructure to provide complete streets; adequate water and sewer service; storm water facilities; and public open space and other amenities.” To meet that objective, the Plan recommends the City “develop a plan for infrastructure improvements that is coordinated with all service providers and private development projects.”

Staff has begun the process of developing a plan to coordinate infrastructure improvements. This report provides an inventory of infrastructure deficiencies within IDEA Commons. It specifically exams the current condition of sanitary sewers stormwater facilities, streets and sidewalks, and public utilities (water, natural gas, and electricity). The information contained within this report will help staff and area stakeholders identify and prioritize needed infrastructure improvements.
SECTION 1: STORM WATER

Redevelopment activity within the southern half of IDEA Commons is significantly hindered by the presence of a floodplain (Figure 1). The City of Springfield is currently working with the United States Army Corps of Engineers (USACE) to conduct a feasibility study of the Jordan Creek watershed for the purpose of flood damage reduction and ecosystem restoration. The Study is currently in the review phase and is expected to be completed by September, 2012.

Figure 1.1 – Floodplain Map

The study will provide recommendations that will reduce the potential for flooding throughout the Jordan Creek watershed, improve water quality, and restore the natural riparian corridor. Study recommendations will be funded through a 40%-60% cost-sharing agreement between the City and the USACE. It is anticipated the study will also provide opportunities for “day-lighting” sections of the creek that flow through the IDEA Commons planning area.

There are currently two options being considered by the US Army Corps of Engineers and the City of Springfield to reduce the size the area prone to flooding:

Option A - Remove existing railroad and construct an open creek channel in the right-of-way
This would entail removal of the existing railroad tracks located within IDEA Commons, and constructing an open channel within the right-of-way. The channel would begin at the confluence of the north and south forks of Jordan Creek and flow west along the right-of-way to the intersection of W Mill Street and N Boonville Ave. The channel would then curve to the southwest and flow adjacent and parallel to the existing box culvert.
Option B - Construct a box culvert underneath East Phelps Street
This would entail constructing an auxiliary box culvert underneath East Phelps Street that would flow from the confluence of the north and south forks of Jordan Creek to a point generally located near the south side of the JVIC. From that point the culvert would flow southwest to the southwest corner of the intersection of W Mill St and N Boonville Ave, where it would then convert to open channel flowing adjacent and parallel to the existing box culvert.

Options A and B are illustrated in Exhibit 1.1

Option A is the more desirable solution. Besides adding a valuable amenity to the area, “day-lighting” Jordan Creek may be the least expensive option. However, in order for this option to be feasible, the existing railroad customers who rely on this section track must relocate their operations elsewhere before the track can be removed. Staff met with the two existing rail customers, Meek’s Lumber and Commercial Metals Corporation, in 2010 while drafting the IDEA Commons Plan. During those meetings, both customers indicated they would consider relocating outside of IDEA Commons if they were presented with the opportunity. However, for both customers, relocation would be contingent on finding a better site with rail service and receiving financial assistance.

The City has not found any potential relocation sites with rail service or any potential funding sources to assist with relocation. If the existing rail customers cannot be relocated, Option B may be the more feasible, although less desirable, solution for Jordan Creek.

The final recommendations of Jordan Creek Feasibility Study will be subject to cost-benefit analyses. It is possible that neither Option A nor Option B will be feasible from a cost-benefit perspective. Under this scenario, the Study may recommend no action to be taken on Jordan Creek inside IDEA Commons. However, given preliminary estimates of the monetary benefit that would result from improving Jordan Creek, staff does not anticipate this scenario to occur.
Exhibit 1.1 – Potential Improvements to Jordan Creek
SECTION 2: SANITARY SEWER

The IDEA Commons Plan proposes future development consist of a blend of general mixed-use, research and development, advanced manufacturing, and education/institutional land uses. More specifically, it proposes that the area accommodate at least 1,000 residential dwelling units. As of 2010, there were approximately 114 residential dwelling units within IDEA Commons. A ten-fold increase in dwelling units, in addition to commercial, industrial, and institutional development, will undoubtedly lead to increased sanitary sewer demand.

IDEA Commons is generally served by a series of 8” diameter PVC pipes running north to south that are spaced at one-block intervals. These pipes connect into a larger system of pipes that run parallel to Jordan Creek, which increase in diameter from 8” to 36” and consist of PVC, cast-in-place plastic, ductile iron, and vitrified clay (Exhibit 2.1, Sanitary Sewer Map).

According to Public Works, Sanitary Services, IDEA Commons currently has adequate sanitary sewer capacity to accommodate future development.
SECTION 3.1: STREETS AND SIDEWALKS

With the exception of Water Street and portions of North Boonville Avenue, North Benton Avenue, and West Phelps Street, the streets and sidewalks within IDEA Commons are generally in poor condition and lack several pedestrian features and amenities. Significant investments in street and sidewalk upgrades will be necessary to encourage and support redevelopment.

The IDEA Commons Background Report includes a brief discussion of the existing conditions of the streets and sidewalks in IDEA Commons. It specifically discusses the potential for Phelps Street to become the primary east-west corridor within IDEA Commons, as well as the need for improved pedestrian and bicycle crossings at the intersections along Chestnut Expressway and construction of a greenway trail crossing underneath the Chestnut Expressway viaduct near the former Tindle Mills site. Such improvements will improve pedestrian and vehicular connectivity within IDEA Commons, as well as improve connectivity with Ozarks Technical Community College, Drury University, Government Plaza, the city-wide Greenway trail network, and greater Jordan Valley.

Complete Streets

The Background Report briefly introduced the complete streets concept. Complete streets are streets that are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists, and public transportation users of all ages and abilities are able to safely move along and across a complete street. There is no prescription for a complete street. Instead street design varies based on context, topography, road function, speed of traffic, pedestrian and bicycle demand, and other factors. For example, design considerations for a street in a densely urbanized area will differ significantly from that of a suburban street or rural highway. In a densely urbanized area, it may be necessary to provide wide sidewalks, bike lanes, plenty of crossing opportunities, bus shelters, pedestrian signals, and raised sidewalks to accommodate high traffic volumes and multiple modes of transportation. Whereas, streets in a more suburban or rural setting may not require as many features to maximize functionality, safety, and comfort for all users.

Figures 3.1 and 3.2 demonstrate how simple upgrades can improve street functionality, safety, and comfort for all users.
Figure 3.1 – Commercial Local/Collector
Upgrades include pedestrian crosswalk, sidewalk bump-outs, on-street parking, pavement striping.

Credit: Storrow Kinsella Associates

Figure 3.2 – Arterial Street
The addition of bicycle lanes, pedestrian crosswalks, pedestrian median refuges, and landscaping can make this street more inviting for pedestrians and bicyclists.

Credit: Storrow Kinsella Associates

An example of a complete street in IDEA Commons is North Boonville Avenue. Sections of this street extending from Olive Street to Tampa Street were recently upgraded as part of a phased streetscape project. Figure 3.3 shows the intersection of Boonville Avenue and Phelps Street looking south before and after street upgrades were completed. The overall safety, function, and appearance of the street have improved dramatically.
Figure 3.3 – Phelps & Boonville, looking south (before and after streetscape upgrades)
Streetscape upgrades included marked crosswalks, ADA-compliant curb ramps, a bike lane, curb bump-outs, on-street parking, landscaping and decorative lighting

Other examples of complete streets in IDEA Commons include North Benton Avenue, between East Tampa Street and East Chestnut Expressway; Water Street, between North Campbell Avenue and North Jefferson Avenue; and East Tampa Street, between North Jefferson Avenue and North Benton Avenue. Upgrades were recently made as part of the implementation of the CIP.

Figure 3.4 – East Water Street (before and after streetscape upgrades)

Figure 3.5 - North Benton Avenue (before and after streetscape upgrades)
Additional streetscape projects are also planned for North Boonville Avenue, between Tampa Street and Chestnut Expressway, and Phelps Street between North Main Avenue and North Sherman Avenue. The planned improvements to North Booneville Avenue are anticipated to be completed in 2011. However, the schedule for upgrading Phelps Street remains undetermined, as funding sources remain to be secured for the project.

Upgrades have also recently been made to portions of West Phelps Street and West Mill Street. Although partially complete, these upgrades have greatly improved the safety, function, and appearance of their surrounding areas.

A map of completed and planned streetscape upgrades is provided in Exhibit 3.1.

Street and Sidewalk Assessment

Staff performed a block-by-block assessment of the streets and sidewalks located inside IDEA Commons to identify apparent physical and design deficiencies that need to be ameliorated. The assessment specifically examined factors that prevent these streets and sidewalks from functioning as complete streets. North Boonville Avenue, North Benton Avenue and Water Street were not included in the assessment since those streets have already been upgraded or are scheduled to be upgraded within the next year. A summary of Staff’s observations is provided in Appendix A.

A general conclusion from the assessment is that all of the streets inside IDEA Commons, with the exception of North Boonville Avenue, North Benton Avenue, Water Street, are functionally and aesthetically deficient. Common observed deficiencies include, but are not limited to the following:

- Cracked and uneven sidewalks, some which are littered with debris and vegetative overgrowth;
- Sidewalk gaps or no sidewalks at all;
- Cracked, crumbling, uneven, and/or non-existent curbs and gutters;
  - Some of the existing curb and gutter consists of cut limestone block, a material that dates back to the early 20th century that is especially susceptible to deterioration.
− Minimal street landscaping;
  o Many streets devoid of street trees, shubs, and/or groundcover.
  o Existing landscaping is dull and needs to be maintained.
− Lack of pedestrian-scaled lighting and pedestrian amenities;
− Uneven and/or narrow street pavement;
− Sidewalk curb ramps that are not ADA-compliant;
− Unmarked crosswalks;

Another conclusion from the assessment is that the intersections along East Chestnut Expressway at North Boonville Avenue, North Jefferson Avenue, and North Benton Avenue do not adequately serve non-vehicular traffic. All three intersections generally lack clearly marked signalized pedestrian crossings with ADA-compliant curb ramps and sidewalks, pedestrian refuges, and other features that improve safety and function. Without upgrades to these intersections, East Chestnut Expressway will continue to be barrier to bicyclists and pedestrians that wish to travel between IDEA Commons and areas to the north, such as Ozarks Technical Community College, Drury University, and Government Plaza.
SECTION 4: UTILITIES (WATER, NATURAL GAS, & ELECTRICITY)

City Utilities of Springfield has conducted an analysis of the existing water, gas, and electric utilities inside IDEA Commons and compiled a list of upgrades that are necessary to provide adequate levels of service to the area and to accommodate future redevelopment. The list is attached to this report as Appendix B. Summarized below are findings of the analysis.

Water
Several of the existing water lines in IDEA Commons are undersized, and therefore lack adequate pressure and volume necessary to supply fire sprinklers and other fire suppression systems. City Utilities’ minimum standard water line diameter is 8 inches. Exhibit 4.1 shows several water lines inside IDEA Commons that are currently less than 8 inches in diameter. According to City Utilities, adequate water pressure and flow can be provided to the area by replacing these lines with lines that are 8 inches or greater in diameter.

In addition to increasing water line diameter, City Utilities also suggests the piping materials be upgraded as well. Most of the existing water lines inside IDEA Commons are made from cast iron, which is no longer a preferred pipe material. Instead, City Utilities suggests that the water lines be replaced with improved piping materials, such as ductile iron or class 900 PVC.

Natural Gas
IDEA Commons is served by a series of high and low pressure natural gas distribution lines consisting of either plastic or coated steel that range between 2 inches and 14 inches in diameter (Exhibit 4.2). Some of these lines need to be replaced due to age, while others need to be upgraded to carry high pressure natural gas. These upgrades will improve the overall condition of distribution system, as well as improve volume.

Electricity
In order to improve reliability and provide added protection from storms, City Utilities has begun relocating overhead electrical distribution lines underground on new development projects. IDEA Commons is currently served by a network of overhead electrical wires. City Utilities suggests the overhead power lines surrounding recently redeveloped areas (i.e. JVIC and Brick City) be relocated underground. As other areas within IDEA Commons redevelop, the surrounding overhead power lines should also be relocated underground.
APPENDIX A

STREETS AND SIDEWALKS ASSESSMENT
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Chestnut Street

North Benton Avenue to North Jefferson Avenue

Deficiencies

− Sidewalks provided only on the south side of the street.
− Sidewalk curb ramps crossing the alley and the Municipal Court building are not ADA-compliant.
− Curb and gutter is cracked and deteriorating in some areas.
− No pedestrian street lighting.
− No landscaping along south side of street.
− Landscaping on north side of street is dull and uninspiring.
Chestnut Street

North Jefferson Avenue to North Boonville Avenue

Deficiencies

− Sidewalks are in very poor condition – cracked and uneven pavement, vegetative overgrowth, obstructed by power poles and street signs, contains gaps.
− Curbing and guttering in very poor condition – cracked and crumbling, vegetative overgrowth.
− Unnecessary curb cuts along the north side of the street.
− Landscaping along north side of street is dull and uninspiring.
− No pedestrian street lighting.
Tampa Street

Washington Avenue to North Fork of Jordan Creek/BNSF Railroad

Deficiencies

− No sidewalks.
− Deteriorating curbing guttering.
− Uneven pavement.
− Street dead-ends without a cul-de-sac, hammer-head, or other type of fire apparatus turn-around.
− No landscaping.
− No pedestrian-scaled lighting or amenities.
− No fire hydrants.
Tampa Street

North Washington Street to North Benton Avenue

Deficiencies

− Deteriorated curb and guttering.
− Rough and uneven pavement at Jones Avenue (alley) crossings.
− Curb ramps on north side of street at Jones Avenue (alley) crossing are not ADA-compliant.
− No pedestrian-scaled lighting.
− No landscaping.
− No pedestrian amenities.
**Tampa Street**

**North Benton Avenue to North Jefferson Avenue**

Deficiencies
- No pedestrian-scaled lighting.
- Section of sidewalk on north side of street near North Jefferson Avenue littered with vegetative growth; adjacent retaining wall is unmaintained.
Tampa Street

North Jefferson Avenue to North Robberson Avenue

Deficiencies

- Street is very narrow; right-of-way width ranges between 20 ft near North Jefferson Avenue and 30 ft near North Robberson Avenue.
- No sidewalks.
- No pedestrian-scaled lighting.
- No landscaping.
- No curb and gutter.
- Debris from building along south side of street litter the street.
- Power poles very close street.
**Tampa Street**

**North Robberson Avenue to North Boonville Avenue**

Deficiencies

- Very narrow street; right-of-way is approximately 20 ft wide.
- No sidewalks.
- No pedestrian-scaled lighting.
- No landscaping.
- Power poles too close to street.
- No curb and gutter.
Tampa Street

North Boonville Avenue to North Campbell Avenue

Deficiencies

- No curb and gutter along south side of street.
- Existing curb and gutter on north side of street in poor condition.
- Sidewalks are inadequate; too narrow, areas deteriorating/overgrown with vegetation.
- No pedestrian-scale lighting.
- No landscaping.
Phelps Street

Confluence of the North and South Forks of Jordan Creek to Jones Avenue (alley)

Deficiencies

− Street surface is too narrow and in very poor condition; the combination of potholes, uneven pavement, and unmaintained railroad crossings pose hazards to pedestrians, cyclists, vehicles, and equipment.
− Railroad is located too close to street.
− No curbing and guttering.
− No sidewalks.
− No pedestrian-scaled lighting.
− No landscaping.
Phelps Street

Jones Avenue (alley) to North Jefferson Avenue

Deficiencies

− Street surface is too narrow and in very poor condition; the combination of potholes, and uneven pavement, pose hazards to pedestrians, cyclists, vehicles, and equipment.
− Railroad track is located too close to street.
− Crossing underneath viaduct is narrow.
− No sidewalks.
− No curbing and guttering or landscaping, except for along north side of street adjacent to the Missouri State Crime Lab.
− No pedestrian-scaled lighting.
− No landscaping.
**Phelps Street**

**North Jefferson Avenue to North Robberson Avenue**

Deficiencies

- Uneven street pavement.
- No curbing and guttering or sidewalks on south side of street.
- Curbing and guttering and sidewalks along the north side of the street east of the Stove Works Lofts are cracked, uneven, and littered with debris and vegetative overgrowth.
- South side of street adjacent to the former Willowbrook plant lacks definition.
- Concrete debris, unmaintained drainage inlet and abandoned railroad tracks along south side of street are unsightly and a hazard to pedestrians.
- Utility poles are located too close to street.
- No pedestrian-scaled lighting
- No landscaping.
Phelps Street

North Robberson Avenue to North Boonville Avenue

Deficiencies

- No curbing and guttering, except for a portion along the north side of the street adjacent to the JVIC.
- Utility poles are located too close to street.
  - No sidewalks.
- No pedestrian-scaled lighting.
- No landscaping.
Phelps Street

North Boonville Avenue to North Campbell Avenue

Deficiencies

- Streetscape improvements have been completed the south side of the eastern half of the block.
- Remaining portions of street are in poor condition. Improvements should be consistent with upgraded section of street.
West Mill Street

North Boonville Avenue to North Campbell Avenue

Deficiencies

− Street surface rough and uneven; needs resurfacing.
− No curbing and guttering along portions of street.
  o Entire south side of street.
  o North side of street near North Campbell Avenue.
− No pedestrian-scaled street lighting.
− Railroad crossing at parking lot driveway is very rough.
− No at-grade pedestrian railroad crossings.
North Washington Avenue

East Chestnut Expressway to East Tampa Street

Deficiencies

- No landscaping.
- No pedestrian-scaled lighting.
- Curb and gutters are cracked and showing signs of deterioration.
- Sections of sidewalk along east side of street are cracked and uneven.
- Driveway curb ramps along west side of street are not ADA–compliant; sidewalks on west side of street are otherwise in satisfactory condition.
North Washington Avenue

East Chestnut Expressway to East Tampa Street

Deficiencies

- Road width narrows from 38 ft north of East Tampa Street to 24 ft south of East Tampa Street.
- Street surface uneven and lacks a defined edge.
- No curb and gutter.
- No sidewalks.
- No pedestrian-scaled lighting.
- Landscaping on east side of street needs maintenance.
North Jefferson Avenue

East Chestnut Expressway to East Tampa Street

Deficiencies

− Curb and gutter on both side of the street is uneven, cracked, and deteriorating.
− Several sections of curb consist of cut limestone.
− Sections of sidewalk have cracked and uneven pavement and vegetative overgrowth.
− No pedestrian-scaled lighting.
− No landscaping.
North Jefferson Avenue

East Tampa Street to East Phelps Street

Deficiencies

- Curb and gutter on both side of the street is uneven, cracked, and deteriorating.
- Several sections of curb consist of cut limestone.
- Sections of sidewalk have cracked and uneven pavement and vegetative overgrowth.
- Sidewalk gaps are present mid-block on the east side of the street.
- No pedestrian-scaled lighting.
- No landscaping.
North Jefferson Avenue

East Phelps Street to East Water Street

Deficiencies

- Curb and gutter on both side of the street is uneven, cracked, and deteriorating.
- Several sections of curb consist of cut limestone.
- Sections of sidewalk have cracked and uneven pavement, vegetative overgrowth, and physical obstructions.
- Pedestrian railroad crossings are rough.
- Overhead utility poles and fire hydrants are located too close to the street.
- No pedestrian-scaled lighting.
- No landscaping.
North Robberson Avenue

East Chestnut Street to East Tampa Street

Deficiencies

− Sidewalks are in poor condition – cracked and uneven pavement, vegetative overgrowth.
− There is a gap in the sidewalk located mid-block on the east side of the street.
− Sidewalks on east side of street are obstructed by overhead utility poles.
− Curb and guttering consists of rolled curbs some of which are cracked and crumbling. This type of curbing does not comply with the City’s design standards.
− No landscaping.
− No pedestrian-scaled lighting.
North Robberson Avenue

East Tampa Street to East Phelps Street

Deficiencies

− Curb and guttering consists of rolled-curbs (except for section of street adjacent to JVIC), some of which are cracked and crumbling.
− No sidewalks.
− No pedestrian-scaled lighting.
− No landscaping (except for portion of street adjacent to JVIC).
− Portions of street surface are cracked and uneven.
− Storm water curb inlets need to be repaired or replaced.
North Campbell Avenue

West Tampa Street to West Phelps Street

Deficiencies

- Brick sidewalks located along the east side of the street on the north end of the block and along the west side of the street on the south end of the block rough and uneven and contain gaps.
- No landscaping, except adjacent to parking lot.
- No pedestrian-scaled lighting or amenities.
- Several sections of curb and guttering consist of cut limestone, which is cracked and crumbling.
North Campbell Avenue

West Phelps Street to West Mill Street

Deficiencies

− At-grade railroad crossing is rough.
− No pedestrian-scaled street lighting.
− No landscaping.
− No curb and gutter along west side of street on south end of block.
− Curb and gutters are in poor condition along east side of street on south end of block.
− Sidewalks are in poor condition, except for section located along the east side of the street on the north end of the block.
North Campbell Avenue

West Mill Street to West Water Street

Deficiencies

- At-grade railroad crossing is rough.
- No pedestrian-scaled street lighting.
- No landscaping.
- No curb and gutter on west side of street.
- Curb and gutter on east side of street is in poor condition.
Chestnut Expressway and North Boonville Avenue

- No pedestrian crossing signals.
- Crossings on Chestnut Expressway are unmarked and lack pedestrian refuges.
- Boonville Avenue crossing on north side of intersection needs to be re-striped.
- Sidewalk curb ramps are not ADA-compliant.
East Chestnut Expressway and North Jefferson Avenue

Deficiencies
- No pedestrian crossing on west side of intersection; visible footpaths indicate pedestrians cross Chestnut Expressway at this location and that an upgrade is necessary.
- No pedestrian refuge on east side intersection.
- Curb ramps are not ADA-compliant.
East Chestnut Expressway and North Benton Avenue

South side of the intersection was upgraded as part of the Benton Avenue streetscape project. Upgrades included new sidewalks and ADA-compliant curb ramps.

The remainder of the intersection needs to be upgraded. Deficiencies included:

- No marked or signalized crosswalks.
- No pedestrian refuges.
- Curb ramps are not ADA-compliant.
APPENDIX B

UTILITIES UPGRADES
(WATER, NATURAL GAS, AND ELECTRICITY)
MSU IDEA COMMONS
OVERHEAD TO UNDERGROUND POWER LINE CONVERSION
COST ESTIMATE

LOCATION # 1: PHELPS - BOONVILLE TO JEFFERSON
600 AMP & 200 AMP UNDERGROUND DISTRIBUTION

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REQUIRED ELECTRIC SERVICE CONVERSIONS
414 N BOONVILLE SINGLE & THREE PHASE SERVICE
424 N BOONVILLE SINGLE PHASE SERVICE
410 N BOONVILLE SINGLE PHASE SERVICE
405 N JEFFERSON CONVERT PRIMARY METER FROM OVERHEAD TO UNDERGROUND
AT&T, MEDIACOM, SPRINGNET AND FIBER OPTIC CABLE WILL NEED TO REMOVE FACILITIES FROM POLES.
EASEMENT REQUIREMENTS:
A 10' WIDE ELECTRIC EASEMENT AT ALL PRIMARY LINE LOCATIONS.
A 15' X 15' ELECTRIC EASEMENT IS REQUIRED AT ALL 600 AMP SWITCH LOCATIONS.

LOCATION # 2: ROBBERSON - PHELPS TO CHESTNUT
600 AMP & 200 AMP UNDERGROUND DISTRIBUTION

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REQUIRED ELECTRIC SERVICE CONVERSIONS
616 N BOONVILLE SINGLE & THREE PHASE SERVICE
224 E CHESTNUT SINGLE PHASE SERVICE
510 N BOONVILLE SINGLE PHASE SERVICE
630 N ROBBERSON SINGLE & THREE PHASE SERVICE
405 N JEFFERSON CONVERT PRIMARY METER FROM OVERHEAD TO UNDERGROUND
AT&T, MEDIACOM, SPRINGNET AND FIBER OPTIC CABLE WILL NEED TO REMOVE FACILITIES FROM POLES.
NOTE: THE WORK AT LOCATION # 3 WILL NEED TO BE COMPLETED AT THE SAME TIME AS LOCATION #2.
EASEMENT REQUIREMENTS:
A 10' WIDE ELECTRIC EASEMENT AT ALL PRIMARY LINE LOCATIONS.
A 15' X 15' ELECTRIC EASEMENT IS REQUIRED AT ALL 600 AMP SWITCH LOCATIONS.
<table>
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<th>East/West Street</th>
<th>Intersection Streets</th>
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<th>Proposed Water Main Size/Type</th>
<th>Existing Gas Main Size/Type</th>
<th>Proposed Gas Main Size/Type</th>
<th>Pipe footage ft</th>
<th>Installation Cost</th>
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**Estimated Total Cost:** $2,425,897.75