

INFRASTRUCTURE PROJECTS

TRANSPORTATION INFRASTRUCTURE RECOMMENDATIONS

Transportation Project #1 – Reconstruct Riverside Drive and Woerner Avenue

Riverside Drive

Riverside Drive is a high priority catalytic project due to its location along the Ohio River and the anticipated development opportunities associated with the riverfront area. The project would begin at Missouri Avenue (extended) and proceed westerly for approximately 1,650 feet to a point that is approximately 750 feet west of the Woerner Avenue intersection. The existing pavement varies in width from 26 feet to 28 feet with essentially no parking on either side of the street. It is the only arterial in the study area and provides access to Jeffersonville to the east where it turns into Market Street. It also provides access to Ashland Park, Falls of the Ohio Interpretive Center, as well as connecting to local streets in Clarksville. Riverside Drive would be reconstructed in a way that would catalyze private development opportunities along the riverfront.

The proposed improvements would include two 11 foot wide travel lanes with flat parking on the south side of the street and curbs on both sides of the street. The south side of the street will have an 8 foot wide sidewalk adjacent to the curb line, a 6 foot wide planting strip, and a 12 foot wide cycle track. The north side of the street will have a 6 foot wide planting strip adjacent to the curb line and an 8 foot wide sidewalk. Amenities include period street lighting, benches, landscaping, bike racks, decorative signage, and related incidentals, including a traffic signal at the intersection with Woerner Avenue. Costs for the reconstruction of the floodwall along the north side of Riverside

Drive, including removing and relocating sections of the floodwall, increasing the width of existing floodgates, and constructing new floodgates, are included in this project. Costs for removing Market Street from Riverside Drive to S. Indiana Avenue are included in this project. A gateway structure at Missouri Avenue is included in this project. The project length is approximately 1,650 feet and runs from the Jeffersonville City limits west to a point approximately 750 feet west of Woerner Avenue. The total estimated construction cost for this project is \$10,247,010, the total estimated soft costs are \$3,444,163, and therefore the total estimated project cost is \$13,691,173.

Woerner Avenue

Woerner Avenue is also a high priority catalytic project due to its location in the southern portion of the study area. Woerner Avenue is approximately 0.32 miles in length and approximately 36 feet in width. The existing street has two travel lanes with flat parking on the west side and head-in parking on the east side. There is an existing sidewalk along the west side of the street. Woerner Avenue is functionally classified as a collector and it would serve as a gateway from the riverfront area into the Town Center area, with the iconic Colgate clock being framed along this corridor.

The proposed improvements would include two 11 foot travel lanes with flat parking and curbs on both sides of the street. The west side of the street will have a 2 foot wide carriage walk adjacent to the curb line, a 10 foot wide cycle track, a 6 foot wide planting strip, and an 8 foot wide sidewalk. The east side of the street will have a 2 foot wide carriage walk adjacent to the curb line, a 6 foot wide planting strip and an 8 foot wide sidewalk. Amenities include period street lighting, benches, landscaping, bike racks, decorative signage, and related incidentals. Traffic signals are included at the intersections with Court Avenue and Clark Boulevard. A gateway structures at the floodwall is included in this project. The total estimated construction cost for this project is \$6,007,470, the total estimated soft costs are \$2,257,092, and therefore the total estimated project cost is \$8,264,562.

Transportation Project #2 – Reconstruct Clark Blvd (L&I RR Overpass to Missouri Ave.)

Clark Boulevard

The segment of Clark Boulevard beginning at the L&I Railroad Overpass and running east to Missouri Avenue would be a medium priority catalytic project and likely would follow the completion of Riverside Drive and Woerner Avenue. Clark Boulevard provides access to Jeffersonville to the east where it turns into 6th Street. The length of this segment is approximately 2,350 feet. The existing street is approximately 32 feet wide and has two travel lanes with flat parking on the north side of the street. There is also a sidewalk located on the north side of the street.

The proposed improvements would include two 11 foot wide travel lanes with flat parking and curbs on both sides of the street. The south side of the street will have a 2 foot wide carriage walk adjacent to the curb line, a 6 foot wide planting strip and an 8 foot wide sidewalk. The north side of the street will have a 2 foot wide carriage walk adjacent to the curb line, a 10 foot wide cycle track, a 6 foot wide planting strip, and an 8 foot wide sidewalk. Amenities include period street lighting, benches, landscaping, bike racks, decorative signage, and related incidentals. Gateway improvements near Missouri Avenue and the L&I Railroad Overpass are included. The total estimated construction cost for this project is \$7,250,808, the total estimated soft costs are \$2,605,226, and therefore the total estimated project cost is \$9,856,034.

Transportation Project #3 – Develop a Wayfinding Signage Program

Connecting to Regional Vehicular Transportation Network

The study area has its primary access to the regional vehicular transportation network via Interstate 65. I-65 is located on the immediate east boundary of the study area and provides immediate access to the south with downtown Louisville. I-65 connects to I-265 approximately 5 miles north of the study area. To the west, I-265 provides access to New Albany and to Louisville via I-64 East and Sherman Minton Bridge, as well as to Evansville and St. Louis via I-64 West. To the east, I-265 provides access to River Ridge and Port of Indiana and is currently being extended into Kentucky via the new east end river bridge project, which will connect I-265 East to I-64.

It is important that signage along northbound and southbound I-65 adjacent to the study area has appropriate guidance to easily direct the traveling public into the study area. Coordination with INDOT will be required to insure this happens. This may require changes to signs that are currently being installed as part of the ongoing river bridges projects. Wayfinding signage immediately adjacent to exit ramps from I-65 will be needed to appropriately guide the traveling public into the study area. Once in the study area, wayfinding signage should continue to be used to guide the traveling public to key destinations within the study area.

Connecting to North Clarksville

Currently the northern portion of the study area has a rather obscure access pattern in order to connect to Browns Station Way (Old SR 62) as well as parts of Clarksville located north of the study area. Starting at the intersection of Clark Boulevard and Stansifer Avenue, in order to move north out of the study area, one option is to travel northwest along Clark Boulevard until it dead ends at Harrison Avenue, then turn east onto Harrison Avenue, travel approximately 200 feet, then turn north onto Randolph Avenue. Randolph Avenue then provides access to Browns Station Way, as well as providing access ultimately to Eastern Boulevard via Brooks Avenue. Another option beginning at the intersection with Clark Boulevard and Stansifer Avenue is to travel east along Stansifer Avenue one block to South Elm Street, then turn north onto South Elm Street, thence north along South Elm Street to Harrison Avenue, then west on Harrison Avenue one block to Randolph Avenue, then north along Randolph Avenue.

Currently there is no signage enabling visitors to the study area to follow either of these options. Wayfinding signage that would show the connection to parts of Clarksville located north of the study area is recommended.

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Transportation Project #4 – Reconstruct L&I RR Overpass over Clark Boulevard

L&I Railroad Overpass

The existing L&I Railroad Overpass on Clark Boulevard will need to be replaced in order to provide appropriate horizontal and vertical clearances for the reconstructed Clark Boulevard. The total estimated cost for this project is \$9,170,000.

Transportation Project #5 – Reconstruct Stansifer Avenue

Stansifer Avenue

Stansifer Avenue serves as a gateway from Jeffersonville's 14th Street as well as I-65 into the north portion of the study area while also providing access to residential areas west of Clark Boulevard. The portion of Stansifer Avenue within the study area is approximately 0.6 mile in length and runs from Clark Boulevard on the west to Akers Avenue on the east. The existing width of the street varies significantly throughout its length from approximately 48 feet to over 80 feet. Portions of the street have a center median and other areas do not have a median. Some areas have head-in parking and other areas have flat parking. There are existing sidewalks on both sides of the street. Stansifer Avenue is functionally classified as a collector.

The proposed improvements would include two 11 foot wide travel lanes with flat parking and curbs on both sides of the street. The south side of the street would have a 7 foot wide planting strip, an 8 foot wide sidewalk, and a 12 foot wide cycle track. The north side of the street would have a 7 foot wide planting strip and an 8 foot wide sidewalk. Amenities include period street lighting, benches, landscaping, bike racks, decorative signage, and related incidentals including gateway improvements near Marriott Drive. It would also include improvements to the intersections with Clark Boulevard and Marriott Drive. The project length is approximately 1,650 feet. The total estimated construction cost for this project is \$8,229,990, the total estimated soft costs are \$2,879,397, and therefore the total estimated project cost is \$11,109,387.

Transportation Project #6 – Reconstruct Clark Blvd (Stansifer Ave to L&I RR Overpass)

Clark Boulevard

The segment of Clark Boulevard serving the north portion of the study area runs from the intersection with Stansifer Avenue southeasterly to the L&I Railroad overpass. Clark Boulevard is functionally classified as a collector. The existing street has two travel lanes and is approximately 28 feet wide. Adjacent to the Cane Run Creek Detention Area, slope erosion is causing problems along the west side of the street which must be addressed. The intersection with Montgomery Avenue is currently a four-way stop and is located adjacent to Colgate Park and the Aquatic Center. The short segment of Clark Boulevard between Beckett Street and Winbourne Avenue is much wider than the rest of the street and has 90 degree parking on the west side of the street.

The proposed improvements would include two 11 foot wide travel lanes with new curbs on both sides of the street. The west side of the street would have a 2 foot wide carriage walk, and a 6 foot wide sidewalk. The east side of the street would have a 2 foot wide carriage walk and a 12 foot wide multi-use trail. A roundabout at the intersection with Montgomery Avenue is included in the project. Slope protection adjacent to the Cane Run Detention area is included in the project. The project length is approximately 3,450 feet. The total estimated construction cost for this project is \$6,462,300, the total estimated soft costs are \$2,109,444, and therefore the total estimated project cost is \$8,571,744.

Transportation Project #7 – Reconstruct Marriott Drive

Marriott Drive

Marriott Drive is fully contained within the northern portion of the study area and is approximately 0.45 miles in length. The existing street has two travel lanes and is approximately 24 feet wide. Although Marriott Drive is functionally classified as a local street, in actuality it serves as a collector, and could be reclassified. Marriott Drive carries a significant volume of traffic as it serves the Clarion Hotel & Conference Center, Atlantis Water Park, Derby Dinner Playhouse, Tom Stinnett Derby City RV, and the KOA Kampground. The intersection with Stansifer Avenue is very problematic during periods of high traffic.

The proposed improvements would include two 11 foot wide travel lanes with new curbs on both sides of the street. The west side of the street would have a 6 foot wide planting strip and a 12 foot wide multi-use trail. The east side of the street would have a 6 foot wide planting strip. Improvements to the intersection with Stansifer Avenue are included in the costs for Stansifer Avenue. The project length is approximately 2,400 feet. The total estimated construction cost for this project is \$3,664,860, the total estimated soft costs are \$1,141,161, and therefore the total estimated project cost is \$4,806,021.

Transportation Project #8 – Reconstruct Montgomery Avenue (Clark Blvd to Marriott Dr)

Montgomery Avenue

Montgomery Avenue provides access to Jeffersonville to the east where it turns into 9th Street and to the west it connects to Clark Boulevard. The portion of Montgomery Avenue within the study area is approximately 0.5 miles in length. The street has two travel lanes and varies in width but is approximately 36 feet wide. The intersection with Clark Boulevard is a four-way stop and is located adjacent to Colgate Park and the Aquatic Center. The L&I Railroad overpass located just east of the intersection with Marriott Drive needs to be replaced with a structure that has adequate vertical and horizontal clearances. The portion of Montgomery Avenue east of the L&I Railroad overpass is very industrial in nature, with the old Colgate Plant to the south and the Colgate's old wastewater treatment plant to the north.

The proposed improvements would be constructed from Clark Boulevard to Marriott Drive and would include two 11 foot wide travel lanes with flat parking and curbs on both sides of the street. Both sides of the street will have a 10 foot wide planting strip adjacent to the curb line and a 5 foot wide sidewalk. The project length is approximately 1,000 feet. The total estimated construction cost for this project is \$2,575,950, the total estimated soft costs are \$831,266, and therefore the total estimated project cost is \$3,407,216.

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Transportation Project #9 – Reconstruct L&I RR Overpass over Montgomery Avenue

L&I Railroad Overpass at Montgomery Avenue

The existing L&I Railroad Overpass on Montgomery Avenue will need to be replaced in order to provide appropriate horizontal and vertical clearances. The total estimated cost for this project is \$10,500,000.

UTILITY INFRASTRUCTURE RECOMMENDATIONS

Utility Project #1 – Reconstruct Stormwater Infrastructure in Town Center Area

Woerner Avenue

The Woerner gravity storm sewer and adjoining pump station are currently adequately sized to serve the current area collected into the town's storm sewer infrastructure draining to the south end of Woerner Avenue. With the new I-65 project additional flow is being routed to the Woerner Avenue system. When evaluating future development needs, increased gravity trunk line sizes and improving transportation routes to include storm infrastructure will be necessary. Proposed development will result in significant increases in runoff for the watershed area draining to Woerner Avenue; therefore, a regional detention system is recommended to provide a mechanism to reduce rates of runoff after development. The regional facility will connect to the exiting Woerner infrastructure and pump station, but will collect from nearly all phases of development within the flood protection wall and levee. Proposed improvements allow the existing pump station and the outfall through the flood control network to be unaffected through the development, while improving the collection and storm event return period that is being provided for through the new storm sewer network and drainage systems. The proposed conveyance system includes nearly 6,000 feet of storm sewers and the regional detention facility is roughly 14 Ac-Ft and is included in the estimated construction cost of \$2,840,000, total soft costs of \$852,000, and overall total project cost of \$3,693,000.

Utility Project #2 – Reconstruct Wastewater Collection Infrastructure along Riverfront

Riverside Drive - Riverfront Area outside Floodwall

The area between the Ohio River Floodwall and the Ohio River is currently served by Pump Station #01 along Riverside Dr. The current duplex pump station pumps are rated at 40 GPM each. The long term projected development sanitary flows from outside the floodwall along Riverside Drive are estimated at 93,000 gpd. This translates to a new required pump capacity of 250 GPM.

The proposed improvements would include an upgraded pump station, gravity sewer extensions and a new force main back across the levee/Floodwall to the south development area. The total estimated construction cost for this project is \$700,000, the total estimated soft costs are \$210,000, and therefore the total estimated project cost is \$910,000.

As this area develops, it will begin to overload the existing Pump Station #14 requiring improvements noted below. Therefore sequencing of the needed sanitary work will be required based on the development progression.

Utility Project #3 – Reconstruct Wastewater Collection Infrastructure in Town Center Area

Woerner Avenue - Initial Area inside Floodwall east of Woerner

The area between Woerner and Missouri north of the floodwall and south of the existing Water Tower Square, is currently unsewered. The redevelopment planning anticipated this being a key component of the project success. A new sanitary sewer extension is required to serve this area. The long term projected sanitary flows from this area south of WTS is approximately 70,000 gpd. This translates to an average flow of 40 GPM for sewer sizing.

The proposed improvements would include approximately 750 feet of gravity sewer extension into the area. The total estimated construction cost for this project is \$250,000, the total estimated soft costs are \$75,000, and therefore the total estimated project cost is \$325,000.

Much like the area outside the floodwall, as this area develops, it will begin to overload the existing Pump Station #14 requiring improvements noted below. Therefore sequencing of the needed sanitary work will be required based on the development progression.

Woerner Avenue - Redevelopment Areas along Woerner Ave to Clark Boulevard

This area includes those areas along Woerner Ave. and to its west between the floodwall and Clark Boulevard. This entire area currently discharges to Pump Station #14 (Smyser) which was upgraded in the last year to include an 8-foot wet well and 266 GPM pumps. The current flows from Water Tower Square will be assumed to continue to discharge to the Jeffersonville system. The portion of the flows from the old Colgate facility will continue to connect to the sewer in Clark Boulevard and the northern area would be routed to the north to Montgomery Ave sewers. The long term projected average sanitary flows from development area, including those noted above, is 370,550 gpd which translates to a required pump capacity of 1,000 GPM at Pump Station #14.

The proposed improvements would include a new, upgraded pump station and new force main virtually all the way to the WWTP unless upgrades are made to the Pump Station #00 (Old Plant) and the gravity sewers that would receive that discharge from Pump Station #00. The improvements also include a new 15" interceptor from Pump Station #14 over to Woerner and nearly 1,400 feet of 12" sewer north to nearly of Clark Blvd where the exiting sewer will be connected. Pavement is not included as it is assumed to occur with the transportation reconstruction projects. The total estimated construction cost for this project is \$2,990,000, the total estimated soft costs are \$897,000, and therefore the total estimated project cost is \$3,887,000.

The construction of the new pump station upgrades and the initial sewers will be required as this area or other areas develop, however some of the sewer extensions could wait and be phased in as development occurs.

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Utility Project #4 – Reconstruct Cane Run Creek Pump Station Infrastructure

As was described previously, the Cane Run Pump Station has been extensively studied and has even had preliminary plans created for a proposed new lift station. To be clear, the Cane Run watershed drains to the Ohio River through an 84" RCP storm sewer that has a backflow preventer to avoid backwater, during high water events on the Ohio River, from flooding the system, which is the downstream end of Cane Run watershed. During these high water events, the flood control pumps are set to switch on at a level just below the finished floor elevation of upstream property. Although the original intent of this station was to protect property, the flood control pumps do not adequately service the community any longer and allow significant flooding in the northern end of the study area.

Several alternatives were previously evaluated, multiple times recommending the construction of a new pump station with 3 new pumps and discharge pipes with a capacity of 90,000-191,000 gpm range. Ultimately a station with 90,000 gpm capacity was recommended with a probable construction cost range of \$5.2 million to \$6.25 million. The difference in these construction costs corresponds to various depths of the station and the pumps operational point which changes the level of ponding. The selected station was based on a 90,000 gpm station that is 3' lower than the existing operating level, and maintains peak flooding for the 5-10 year storm event. For this study and given that the estimate was developed 2 ½ years ago, a proposed construction cost estimate of \$5,500,000 is included, with \$1,650,000 in soft costs, which corresponds to a total project cost of \$7,150,000.

Utility Project #5 – Other Utilities Infrastructure Allowance

Other Utilities

Other utility extensions will be required for water, gas, electric, telecommunications, etc. Depending on the new loads generated, some of the extension capital costs may be offset by future projected utility revenues. Such offsets may not be known for years. It is suggested that an allowance for other utility capital costs be established for the development. An allowance of \$1,000,000 to \$2,000,000 should be considered.

SUMMARY MATRIX

Project	Description	Study Area Location	Estimated Project Cost (millions)
Transportation Project #1(a)	Riverside Drive Improvements (Jeffersonville City Limits to Ashland Park)	Riverfront	\$8.44
Transportation Project #1(b)	Floodwall Relocation/Reconstruction (Market Street Area)	Riverfront	\$5.25
Transportation Project #1(c)	Woerner Avenue Improvements	Town Center	\$8.26
Transportation Project # 2	Clark Boulevard Improvements (Missouri Ave. to L&I Railroad Overpass)	Town Center*	\$9.85
Transportation Project # 3	Wayfinding Signage Program	Full Study Area	Contingent on extent of program
Transportation Project # 4	Reconstruct L&I Railroad Overpass (Clark Boulevard)	North Study Area	\$9.17
Transportation Project #5	Reconstruct Stansifer Avenue	North Study Area	\$11.1
Transportation Project #6	Reconstruct Clark Boulevard (Stansifer Avenue to L&I RR Overpass)	North Study Area	\$8.5
Transportation Project #6	Reconstruct Marriot Drive	North Study Area	\$4.8
Transportation Project #8	Reconstruct Montgomery Avenue (Clark Boulevard to Marriott Drive)	North Study Area	\$3.4
Transportation Project #9	Reconstruct L&I Railroad Overpass (Montgomery Avenue)	North Study Area	\$10.5

Project	Description	Study Area Location	Estimated Project Cost (millions)
Utility Project #1	Reconstruct Stormwater Infrastructure	Town Center	\$3.69
Utility Project #2	Reconstruct Wastewater Collection Infrastructure	Riverfront	\$0.91
Utility Project #3	Reconstruct Wastewater Collection Infrastructure	Town Center	\$0.32
Utility Project #4	Reconstruct Can Run Creek Pump Station Infrastructure	North Study Area	\$7.15
Utility Project #5	Other Utilities Infrastructure Allowance	Full Study Area	\$1.0 - \$2.0