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SUPPLEMENTAL NARRATIVE

For the

KEYSTONE EMPLOYMENT AND ECONOMIC PLAN STUDY

**Borough of Pottstown &
West Pottsgrove Township
Montgomery County, PA**

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A. GENERAL PROJECT OVERVIEW

The Keystone Employment and Economic Plan (KEEP) has been developed to create a new and vibrant employment center that maximizes the re-development area's ("Study Area") potential through private partnerships. The "Study Area" covers a total of approximately 255 acres, which consists of 13 different parcels within Pottstown Borough and West Pottsgrove Township. It is bounded to the west by South Grosstown Road, to the south by the Schuylkill River, to the east by College Drive at its intersection with Keystone Boulevard, and on the north by the Norfolk Southern rail line. This re-development area currently consists of multiple vacant or underutilized parcels previously primarily used by industry. Pottstown Borough and West Pottsgrove Township have entered into a Memorandum of Understanding (MOU) to enhance communication and cooperation between the municipalities in order to bring about economic development of the this area. The success of this effort will be affected by the extension of Keystone Boulevard and the reconstruction of the Stowe and Armand Hammer Boulevard interchanges on U.S. Route 0422.

The purpose of this narrative is to provide supplemental information to support the Specific Plan developed for the "Study Area".

B. UTILITY INFRASTRUCTURE ASSESSMENT

The following presents the current status of the existing utility infrastructure for the Study Area in regards to public water, sanitary sewer, stormwater facilities, and other utilities.

Water

The Borough of Pottstown owns and operates the public water system which serves the entire "Study Area" in both the Borough of Pottstown and West Pottsgrove Township. The Pottstown Borough Water Treatment Plant is located within West Pottsgrove Township just west of the "Study Area" along the Schuylkill River. The primary water source for the system is the Schuylkill River.

According to discussions with the Pottstown Borough Authority's Engineer, the Water Treatment Plant currently uses 4 to 4.5 MGD (million gallons per day) on average. The plant is permitted for 8 MGD, and its maximum capacity is 12 MGD. A 12-inch pipe is located within the Borough's existing Keystone Boulevard. The pipe has a pressure of approximately 70 psi. Fire flow at the existing end of the 12-inch pipe is approximately 1,800 GPM (gallons per minute) at 20 PSI. It was indicated that the existing water system currently does not have any capacity constraints. Pottstown Borough also owns a 24-inch pipe within West Pottsgrove Township's Old Reading Pike. The existing Universal Concrete industrial property within the "Study Area" is currently served by this line.

The extension of existing 12-inch water line from its current terminus at Keystone Boulevard to Old Reading Pike (approximately 4,500 LF) would provide water service and adequate looping of the water distribution system for future development of the "Study Area". This extension should not impact existing pressure, but fire flow would increase to approximately 3,200 GPM at 40 PSI.

Sanitary Sewer

Pottstown Borough owns and operates the sanitary sewer facilities within the Borough portion of the “Study Area” which includes the sewage collection system, conveyance system, and waste water treatment plan (WWTP). West Pottsgrove Township owns and operates the sanitary sewer facilities within the Township port of the “Study Area” which includes sewage collection system, conveyance system including sewage pumping stations.

According to discussions with the Pottstown Borough Authority’s Engineer, the WWTP used an average of 5.83 MGD in 2015. The National Pollution Discharge Elimination System (NPDES) permit capacity is 12.85 MGD. The WWTP should have adequate capacity for future growth in the “Study Area”. The WWPT does not have any biological organic loading restrictions either as it is well below permitted capacities.

An existing low pressure sanitary sewer (LPSS) system serves the properties along the existing Keystone Boulevard. The existing industrial development along Keystone Boulevard utilizes privately owned grinder pump systems to convey sewage to the public force main. The LPSS force main in Keystone Boulevard is approximately 3,300 LF in length, varying in size from a 3-inch to 2.5-inch to 2-inch stepped diameter which flows eastward to College Drive, and the north along College Drive approximately 700 feet discharging to existing gravity sewer in High Street near the intersection with College Drive. A preliminary conceptual analysis of the 3-inch LPSS hydraulic discharge capacity indicates that a reasonable maximum capacity of approximately 60 +/- GPM is available at a reasonable operating pressure. This could vary based on the flow characteristics of the existing and future users.

The majority of the Keystone Boulevard extension area lies within the western portion of the “Study Area”. West Pottsgrove Township’s Pump Station No. 1 – Old Reading Pike (ORPPS) is located just west of the proposed junction of the Keystone Boulevard Extension and ORPPS, and is one likely point of service for the western portion development area. ORPPS has capacity to serve the entire western portion at the highest wastewater flow likely to be generated supported by the 2015 West Pottsgrove Township (WPT) Chapter 94 Report. The ORPPS force main is currently proposed for replacement with the same diameter as the existing. It should be noted that due to the age of the ORPPS, modifications from an operational standpoint may be necessary to support additional future flows.

The 2015 WPT Chapter 94 Report contains the following information based on current wastewater flows to ORPPS:

- The peak hydraulic capacity of PS #1 is 806,400 GPD
- The calculated maximum daily flow for 2015 was 146,720 GPD or 102 GPM.

Therefore, the calculated available capacity of ORPPS is $806,000 - 146,720 = 659,680$ GPD or 458 GPM.

The Township has a permitted hydraulic loading capacity allocation from the Pottstown Borough Authority of 1.6 MGD. In 2015, the Township projected a maximum flow of approximately 1 MGD. There is an available capacity of approximately 1,600 EDU’s.

There is an existing access under the railroad from W. High Street to the west portion of the “Study Area”, located east of the intersection of West High Street/Center Street. The access is formerly known as Flagg Lane, and currently not in use, however it does provide for a potential access point to the 8-inch and 15-inch gravity sewers in West High Street for a future force main or LPSS.

Planning for the utility needs of a development of unspecified industrial and manufacturing uses, presents special challenges. For wastewater planning, differences between dry industrial processes and wet ones can present a significant difference, and high volume users are seldom encountered, in comparison to other uses. Building initial infrastructure to accommodate the high-volume user can result in significant overbuilding. Flexibility is a key design parameter and should be balanced with planning to allow future changes or additions to the infrastructure, and at the same time not overbuild the facilities, thereby maximizing the benefit from initial infrastructure investment. Initial planning for the Keystone Boulevard Extension has cited Industrial/Manufacturing uses and Advanced Technology sectors as the most desired uses for the study area. A well thought out wastewater collection and conveyance plan will create the flexibility to meet a variety of potential land uses while controlling and minimizing initial infrastructure investment, and preventing overbuilding.

Estimating wastewater flows for raw land is typically based on GPD/Acre. Where lots or tracts have been laid out for development, building square footage can be estimated and wastewater generation based upon the square footage based on experiential data that has been developed over time. At the initial planning level, such as targeted area study or the development of a Pennsylvania Act 537 Sewage Facilities Plan, wastewater generation based on raw acreage within the various zoning districts is often employed. Often, municipal development ordinances for industrial and technological zoning districts utilize standard allowances based on acreage until specific uses are specified.

Planning and factoring in the environmental and site constraints, then using them to determine a conceptual definition of developable ground, yields an approximate developable acreage of 61 +/- acres of the approximate 255 acres contained in this study area. Assuming an 80% building coverage on the 61 acres yields a coverage of 48.8 acres or 2,370,000 +/- SF. Planning for the Borough (eastern) and Township (western) portions of the “Study Area” assumes a 50/50 split in the total developable area for conceptual estimates of service needs, or 24.4 +/- acres (1,185,000 SF for each portion).

The amount of wastewater generated by the range of potential uses within this study area varies widely. Commonly used planning value range for estimating wastewater generation of an unspecified uses in Industrial and Technology/Research zoned districts range vary between 900 GPD/acre to 8,000 GPD/acre based on gross planned land area. Commercial and high-density residential would also likely fall within this range.

A median range of mixed use development consisting of commercial, hotel, light industrial and technology, and residential uses would be 1,800 – 2,200 GPD/acre of wastewater expected to be generated, and compute to 6,000 to 78,000 GPD for either portion of the study area (122,000 to 156,000 GPD total).

Alternatives for Service

Eastern Portion Study Area

The existing sanitary sewer serving Keystone Boulevard is a 3" low pressure sewer (LPS) which connects to a MH in West High Street via College Drive where it crosses under the mainline RR. The 3300 LF within the Keystone Blvd. ROW begins at College Drive as 3-inch diameter then steps down twice to 2½-inch then again to 2-inch.

A preliminary conceptual analysis of the 3-inch LPS hydraulic discharge capacity indicates that a reasonable maximum of approximately 60 +/- GPM is available to serve the existing and future users of the East Side.

Alternatives: There are two defined alternatives. Pumping is required for either alternative.

1. Low Pressure Sewer
 - a. Utilize existing LPS to extent possible within capacity capability. Parallel existing LPS with additional 3" or 4" LPS to meet future needs, constructed as a "dry" sewer.
 - b. Connect the new "dry" LPS to the gravity sanitary sewer in High Street when and as necessary, and interconnect where appropriate.
2. Gravity Sewer
 - a. Construct a gravity sewer along Keystone Boulevard and a pumping station between the Route 100 overpass and College Drive.
 - b. Construct a force main from the pumping station, flowing College Drive and connection to the 15-inch gravity sanitary sewer in High Street.

Recommendations:

1. Pumping will be required for either alternative. The existing LPS is a resource that should be utilized to its maximum benefit.
2. LPS (Alternative 1) has a significantly lower initial cost than constructing gravity sewer and a pumping station. More capacity to complement the existing LPS could be provided in a new parallel LPS, and interconnected where appropriate. Base LPS sizing for largest planned facilities based on using both existing and new LPS in parallel.
3. One time the gravity sewer option may have merit would be if it had the ability to serve the complete site. The topography is such that some form of pumping would be required on the West Side to access the gravity sewer, either by another pumping station or LPS.
4. As Keystone Blvd is being reconstructed, any new sanitary sewer facilities should be placed outside of paving, and allowances in facilities design made to enable easy and cost minimizing construction of any required future utility upgrades.

Western Portion Study Area

The Western Portion is planned, and has no existing facilities. WPT's Pump Station No. 1 – Old Reading Pike (ORPPS) lies just west of the proposed junction of the Keystone Boulevard Extension and ORPPS, and is one likely point of service for the West Portion's facilities. Based on the 2015 WPT Chapter 94 Report, ORPPS has capacity to serve the entire West Portion at the highest wastewater flow likely to be generated. The available peak capacity is approximately 659,680 GPD or 458 GPM.

Alternatives: There are several potential alternatives and options. Pumping facilities are required to serve this area. This could be a conventional pumping station or LPS.

Connection to existing Old Reading Pike gravity sanitary sewer that connects to ORPPS can be by one of 3 alternatives:

- Connection to the existing sanitary sewer at minimum slopes, enables only 150± feet of Keystone Boulevard could be served.
- Bypassing the existing sewer in Old Reading Pike, and running directly to Pumping Station #1, gravity sewer could serve approximately 800 – 1000 feet of Keystone Boulevard from ORPPS, and be approximately 11 feet deep at the Old Reading Pike & Keystone Boulevard intersection.
- To run entire WPT side sanitary sewer to ORPPS as gravity, sewer would result in 30 feet depth at Old Reading Pike & Keystone Boulevard intersection.

Connection to the existing gravity sewer facilities in West High Street via Flagg Lane is also a potential route of connection to the public sewers. This can be done by conventional pumping station with force main, or by LPS. LPS can be constructed as 2 parallel pipes, one initially active, and one “dry” pipe in reserve until additional capacity is needed, and to maintain minimum flow velocities.

1. Low Pressure Sewer
 - a. Pump via (4” – 6”, or 3” & 4” dual pipes) LPS to a newly constructed 8” gravity sewer to the ORPPS.
 - b. Pump via LPS main (4” – 6”, or 3” & 4” dual pipes) to ORPPS or network into new ORPPS force main (FM)
 - c. Connect LPS to either ORPPS, or to the 8-inch or 15-inch gravity sewer in West High Street via Flagg Lane.
 - d. Construct LPS to gravity sewer on Eastern Portion if that option is chosen.
2. New Pumping Facilities Conveying to Old Reading Pike – PS#1
 - a. Construct new gravity sewer along the new Keystone Boulevard extension
 - b. Construct new pumping station strategically along the new Keystone Boulevard extension
 - c. Pump via new force main (4” – 6”) to ORPPS via one of the three gravity sewer alternatives cited above.

- d. Connection can also be made to ORPPS force main, networking the FM rather than re-pumping the flow.
 - e. Pump via new force main (4" – 6") to ORPPS or network into new ORPPS force main (FM)
3. Pumping Conveying to West High Street via Flagg Lane
 - a. Construct new gravity sewer along the new Keystone Boulevard extension
 - b. Construct new pumping station strategically along the new Keystone Boulevard extension.
 - c. Connect the force main from the pumping facilities to the 8-inch or 15-inch gravity sewer in West High Street via Flagg Lane.

Recommendations:

1. Pumping is required for any of the western portion alternatives.
2. LPS (Alternative 1) has a significantly lower initial cost than constructing gravity sewer and a pumping station.
3. Flexibility in design can be gained by constructing a LPS with 2 parallel pipes, one initially active, and one "dry" pipe in reserve until additional capacity is needed, and to maintain minimum flow velocities. Size for largest planned facilities based on using both existing and new LPS in parallel.

Stormwater Facilities

Both Pottstown Borough and West Pottsgrove Township own and maintain their individual stormwater facilities in accordance with the MS4 program. Much of the "Study Area" is impacted by the FEMA 100-year floodplain.

Stormwater runoff from the Pottstown Borough portion of the "Study Area" flows in a southerly direction and discharges directly to the Schuylkill River. Along existing Keystone Boulevard, a 36" culvert was installed to convey stormwater runoff from the north side of the road, under the road, and towards to the river. The Borough has indicated this culvert functions adequately until the river floods the area. On the south side of the "Flagg" property, a 24" pipe connects to an elliptical corrugated metal pipe within an existing 20-foot wide easement. This pipe discharges into a swale, which flows to a culvert under Route 422 Bypass, which then ultimately discharges to the Schuylkill River. A pond is located on the "Flagg" property, with a 15" pipe that discharges from the pond to a drainage ditch.

In the West Pottsgrove Township portion of the "Flagg" property, a 48" pipe conveys flow under Old Reading Pike and the existing paved multi use Schuylkill Trail. It then discharges to the previous referenced 24" pipe to the south. A stormwater facility rain garden is proposed at the south end of the Universal Concrete property to be constructed as part of their land development being done due to PennDOT taking of lands for the Route 422 improvements. There are multiple culverts that convey upslope runoff under Old Reading Pike, as well as under Route 422.

The extension of Keystone Boulevard, and ensuing development, must be constructed in a manner that does not adversely impact current storm water flow conditions. Construction the roadway at a higher elevation than the existing grade will improve conditions during storm event.

Based on the review of the information provided, Bursich is not aware of any storm sewer system capacity issues which would restrict the overall development of "Study Area" if the floodplain and conveyance issues are adequately addressed.

Generally accepted stormwater planning practice would suggest that the "Study Area" be deemed a conditional non-detained area, due to its very close proximity to the Schuylkill River and the extent of the floodplain. However, current NPDES Post Construction Stormwater Management regulations require reduction of post development peak flow rates to the pre-development conditions, unless there is an approved Act 167 Stormwater Management Plan that allows for different requirements (such as direct discharge). Bursich is not aware of any approved Act 167 Stormwater Management Plan for the "Study Area". Therefore, to meet current NPDES permit requirements, stormwater management basins and facilities will need to be provided for peak runoff rate control (detention), as well as for runoff volume reduction (infiltration) and water quality. Soils suitability will need to be verified through actual field testing at the time of design of any infiltration facilities.

Electrical, Gas, Communications

The Borough and Township staff confirmed that Philadelphia Electric Company (PECO) provides the Borough and Township with electric and natural gas services. It is our understanding that Verizon and Comcast provide communication services to the Borough and Township. Bursich has not been able to obtain any detailed information from PECO, Comcast, or Verizon directly on these utilities. Bursich did perform a PA One Call notification as part of the survey phase, and utilities that were marked-out or visible in the field are shown on the Existing Features and Site Analysis Plans.

Further evaluation of the existing infrastructure will need to be done as a part of the future development design phase.

C. ROAD EXTENSION ALIGNMENT ANALYSIS

Horizontal Alignment

The following potential road extension alignments were analyzed:

Alternate 1

Alternate 1 is the alignment illustrated in the plan documents prepared by Bursich. It places the Keystone Boulevard extension within the PECO right of way and follows the existing alignment of the Schuylkill River Trail. This alternative minimizes the factors against it while maximizing the buildable area.

Pros:

1. This location connects College Avenue with Old Reading Pike by constructing approximately 4,500 LF of new road.
2. There are no wetland crossings needed for this alignment.
3. Maximizes the buildable area in each lot compared to Alternates 2 and 3.
4. No additional right of way should need to be acquired from the individual property owners since the road would stay in the PECO right of way.

Cons:

1. 4,500 LF of the existing Schuylkill River Trail would need to be raised and reconstructed.

Alternate 2

Alternate 2 would re-route Keystone Boulevard past the existing reservoir and inactive landfill on the Pottstown Industrial Investments LLC property, the route it north toward the railroad tracks, then parallel the tracks and connect to the Old Reading Pike near the abandoned bridge.

Pros:

1. The length of new road construction is 4,000 LF, which is 500' less than Alternate 1.
2. There are no wetland crossings needed for this alignment.

Cons:

1. Cuts off possible rail access to the former Flagg Property (Pottstown Industrial Investments LLC property and West Pottsgrove Industrial Commons LLC property).
2. Would need to reconstruct Old Reading Pike in the vicinity of the old bridge. It is our understanding the bridge deck, span, and portions of the abutments and walls are to be removed by others. It is likely that additional demolition will be required to the remaining walls.
3. Would need to cross the existing rail spur to the Barclay and Vari Corp properties creating a safety and traffic control concern.
4. Rebuild 1,700 LF of the existing Schuylkill River trail as it parallels the new road and climbs out of the floodplain.
5. Additional right of way would need to be acquired from three property owners (Pottstown Industrial Investments LLC, West Pottsgrove Industrial Commons LLC, and Norman and Nancy Barclay).

Alternate 3

Alternate 3 would re-route Keystone Boulevard just past PA Route 100 and route it north towards the railroad tracks, parallel the tracks and connect to the Old Reading Pike near the old bridge. This alternative was the least attractive.

Pros: N/A

Cons:

1. The length of new road construction is 7,400 LF making it 2,900 LF longer than Alternate
2. Cuts off possible rail access to six of the property owners bordering the Norfolk Southern rail lines. (The seventh owner, the Constantine II, LP properties, cannot be served due to vertical grade changes with the railroad.)
3. Would need to reconstruct Old Reading Pike in the vicinity of the old bridge. It is our understanding the bridge deck, span, and portions of the abutments and walls are to be removed by others. It is likely that additional demolition will be required to the remaining walls
4. Would need to cross the existing rail spur to the Barclay and Vari Corp properties creating a safety and traffic control concern.

5. Would involve 4 wetland crossings with significant impacts. Since an alternative road alignment is feasible, PaDEP would not approve the filling of these wetlands.
6. Takes away buildable area along the Norfolk Southern property line while not picking up buildable area along the existing Keystone Boulevard since it is in the floodway and cannot be filled.
7. Additional right of way would need to be acquired from all of the property owners associated with the Keystone Boulevard extension.

Vertical Alignment

The existing Keystone Boulevard is within the FEMA floodway of the Schuylkill River and cannot be raised. Another 600 feet of the proposed road extension would still impact the floodway and the proposed road grading was designed to minimize the impacts of the proposed road on the floodway. Beyond this point, the road parallels the existing reservoir and inactive landfill so that a minimum 1% grade is possible to raise the roadway to the level of the 100-year floodplain where the buildable area is. After this point the road undulates up and down to keep it just above the 100 year floodplain elevation and to minimize the proposed earthwork. Once the existing grades are above the 100 year floodplain elevation, the road grade was held at the same grade as the existing topography to minimize the amount of earthwork needed.

D. POTENTIAL FOR RAIL SERVICE

Rail service to several portions of the “Study Area” may be feasible by using existing Norfolk Southern rail sidings to the north of the “Study Area” and extending them in the site. Norfolk Southern is the owner/operator of the Harrisburg Line, a Class 1 double stack capable railroad running along the Schuylkill River through Pottstown Borough and West Pottsgrove Township. Norfolk Southern also owns the Stowe Yards to the north and contiguous to the “Study Area”.

Locations for siding and yard connections into the redevelopment area will need to consider environmental constraints such as streams and wetlands, as well as topography and vertical grade requirements that most likely will dictate the locations of sidings into the site. Further evaluation and coordination with Norfolk Southern will need to be done as a part of the future development design phase.

E. ENVIRONMENTAL OVERVIEW

A separate “Final Environmental Overview” (EO) report was prepared by A.D. Marble, dated August 2016, which identifies critical environmental and cultural resource conditions within the parcels identified as the “Study Area”, and determines which environmental or cultural features might require additional analysis. The EO will serve as the basis for conducting further environmental and cultural investigations, and will be used as tool when considering the potential of parcels for redevelopment. Based on the nature of the “Study Area”, the focus of the EO is on hazardous waste, archeological and historic resources, aquatic resources, and threatened and endangered species since these resources are the most likely to impact future development of the “Study Area”. The investigations for each subject area are outlined in the report.