CITY OF HOUSTON

TECHNICAL MEMORANDUM FOR W. FUQUA STREET PAVING AND DRAINAGE:

CITY OF MISSOURI LIMITS TO BAZEL BROOK DRIVE

FINAL PRE-ENGINEERING TECHNICAL MEMORANDUM

WBS: CoH Design WBS No. N-100025-0001-3

AUGUST 2015

8-17-2015

STATE OF TEXAS
EDELMIRO CASTILLO
49753
REGISTERED
PROFESSIONAL ENGINEER

Edelmiro Castillo

Date: August 17, 2015

This Technical Memorandum summarizes the pre-engineering study findings and recommendations to proceed with the design of W. Fuqua Street from City of Missouri limits to Bazel Brook Drive approximately 1.8 miles. **Figure (1) – W. Fuqua** illustrates the limits of the NT-R1 W. Fuqua Street improvement project.

Background

The City of Houston Infrastructure Planning Branch has contracted with OMEGA Engineers, INC., (OMEGA) to perform Single Phase Engineering Services in order to qualify various project areas for further development and inclusion into the City's CIP under WBS No. N-000100-0005-3, Outline Agreement No. 4600011900, Work Order No. 1. The study area in this report is NT R1, West Fuqua Street from Missouri City limits to Chimney Rock Road.

Planning 1 phase started in February 2013, pursuant to the above work order, OMEGA conducted field investigations, collected and reviewed existing as-builts, obtained traffic counts for through and turning movements, and analyzed existing drainage systems and outfalls to determine total system capacity.

OMEGA also requested information from various public and private utilities to determine existing and proposed facilities. The information collected was presented in the Planning 1 presentation and report. The study area have several deficiencies:

- Pavement condition: the field investigation and Pavement Condition Rating provided by the City indicates a fair condition in some parts and a bad deteriorating condition in other parts of the roadway
- Drainage issues: after conducting the drainage analysis it was found that in some drainage areas, the storm sewer system and outfalls are below required capacity, that causes flooding and ponding issues in some areas. Furthermore, due to the deterioration of the road, some gutters and curbs are either missing or broken which affects the collection of storm water.
- Traffic: The Level of Service along the corridor was found to be at an acceptable level. However, several intersection turning movements were below acceptable level.
- Pedestrian mobility and safety: Due to the close proximity of residential developments such as a branch library and local schools, Pedestrian circulation is very important. Most residential and commercial tracts along Fuqua Street include sidewalks. However, there are a number of areas where the pedestrian facilities are noncompliant relative to ADA and require extensive repairs. There are conflicts in areas where manholes have been placed within the sidewalks and uneven settling has caused certain sections to become broken and impassable.

After presenting the findings of Planning 1 to the COH-IPB and receiving feedback, the project advanced to the Planning 2 phase. Planning 2 discusses the alternative analysis considering the following: existing conditions, deficiencies, existing pavement conditions, thoroughfare classification, typical sections, traffic capacity, storm water drainage system capacity, water and wastewater facility conditions and capacity, and right-of-way widths.

Multiple alternative solutions were presented in conceptual form to facilitate discussion and reach a consensus on which alternatives should be further developed. Following the Planning 2 presentation, Alternative D was selected by the committee for further development.

The final Report (Planning 3) revised report was submitted in November 2014. This report focused on the candidate project (Alternative D). Additional Storm Sewer analysis was performed using SWMM to mitigate for the 2-yr, and 100-yr events in order to avoid upsizing the outfall. In planning 2 (using method one) the existing outfall size was increased.

The public meeting to present and engage the residents in the vicinity of the study area was held on July 21st, 2015. The City of Houston (COH) requested Omega Engineers to attend the meeting. The project is now part of the 2016-2020 Capital Improvement Plan, Project No. N-100025-0001-3.

Figure (1) – W. Fuqua

November 2014 Final Report Recommendations (A Recap of Pre-Engineering Study Results)

The results of the analysis and findings of the study included the following recommendations:

1. W. Fuqua Street at Fondren Road Intersection (Signalized Intersection):
   - Add 2nd left turn lane on eastbound W. Fuqua St with a proposed storage of 300 ft.
   - Add a dedicated right turn lane on southbound Fondren Rd with a proposed storage of 300 ft. and revise the middle lane to provide a shared left and thru movement.
   - Install a new mast arm signal system as existing does not meet the City standards
2. W. Fuqua Street at Hillcroft Ave Intersection:
   - Add an exclusive left turn lane on eastbound W. Fuqua St with minimum 100-150 ft. storage.

- Install a separate left turn lane signal indication (a three sections signal head on existing mast arm facing the eastbound traffic)

3. W. Fuqua Street at Ridgerock Road Intersection (ALL-WAY STOP):
   - Install a dedicated left turn lane on both EB and WB approaches with minimum 75-100 ft storage.
   - Consider converting to a minor approach STOP control intersection in the future to improve mobility along the major corridor.
4. W. Fuqua Street at W. Ridgecreek Drive Intersection:
   - Consider installing a traffic signal at this intersection with a Pedestrian Count Down signal system.
5. Optimize signal phasing & timings at intersections
6. Interconnect all the existing and future traffic signal along the corridor to improve mobility and safety
7. Improve pedestrian mobility and public safety by adding 5-ft sidewalks on both side of the street within the study area where it is missing in some parts. Add ADA compliant wheel chair ramps and other pedestrian facilities like crosswalk pavement markings
8. Install Audible Pedestrian Signals (APS) settings and Pedestrian Count Down signal system at intersection
9. Drainage issues should be minimized if not eliminated with the construction of W. Fuqua
10. Appendix A provides schematic drawings of the proposed design for W. Fuqua Street from City of Missouri limits to Bazel Brook and the proposed intersection improvements.

Public Comments

The comments received from the public at the public meeting brought up by residents along W. Fuqua Street and its vicinity were collected during the meeting **(Appendix B)**. The most common issue that arose in the comments was drainage related issues like flooding and missing grates, on street parking, street signs, speed limit, and access during construction.

The comments are categorized as the following:

i. Drainage Concerns:

a. Residents mentioned that there are missing metal grates on W. Fuqua especially in the section west of Fort Bend Parkway this poses a public safety concern. They also asked the city to find alternatives from the metal grates when proceeding with the new construction, because metal grates often being stolen and sold as scrap metal.

b. Flooding was mentioned several times by the residents as a major complaint, noticeably in two areas; the intersection of W. Fuqua and Blue Ridge (the library area) and the area under Fort Bend Parkway. The residents also pointed out the presence of relatively big potholes along W. Fuqua causes ponding during rain events

ii. **Parking during construction:**

The resident raised their concern over finding alternative car parking during the construction phase. Also requested this effort to be coordinated by the Council Member, the City of Houston, and local police because it requires coordination between all parties involved also to insure the safety of resident and their vehicles

iii. **Traffic Issues:**

The participants in the meeting also shared their observation of frequent car accidents and fatalities on the intersection of W. Fuqua with Fondren. The other traffic problem mentioned regarding this intersection is; 18 wheeler trucks having hard time turning into Fuqua and often clipping the curb

iv. **Street Signage along Fuqua:**

Resident asked to add more street signs like "No parking" signs (from Bagel Brook to Fondren on both sides) and speed limits signs along W. Fuqua

v. **Right of Way:**

Residents wanted to know if there will be properties lost due to additional Right of Way acquisition

vi. **Covered bus waiting areas**

The public expressed the need for covered bus waiting area on W. Fuqua

Conclusions and Recommendations

The City has concluded that no changes should be made to the Pre-Engineering recommendations based on the public feedback, and that the comments should be considered to be incorporated during final design.

APPENDIX A

Overall Layout and Intersection Improvement Exhibits

WEST FUQUA STREET RECONSTRUCTION

FROM MISSOURI CITY LIMITS TO BAZEL BROOK

RECOMMENDED SOLUTION - W. FUQUA AND FONDREN

- Add 2nd Left Turn Lane On Eastbound W. Fuqua St
- Add A Dedicated Right Turn Lane On Southbound Fondren Rd And Revise Middle Lane To A Shared Left And Through Lane
- Install Pedestrian Crossing Safety Mechanism

SIDEWALK

STRIPING

TREE

EXISTING MEDIAN

MEDIAN

PAVEMENT

TRAFFIC SIGNAL

N

REBUILD HOUSTON

better streets. better drainage. better future.

RECOMMENDED SOLUTION - W. FUQUA AND HILLCROFT

- Add Exclusive Left Turn Lane On Eastbound W. Fuqua
- Add Sidewalk Along South Side Of Fuqua
- Install Pedestrian Crossing Safety Mechanism

SIDEWALK

STRIPING

TREE

EXISTING MEDIAN

MEDIAN

PAVEMENT

TRAFFIC SIGNAL

N

REBUILD HOUSTON

better streets. better drainage. better future.

RECOMMENDED SOLUTION - W. FUQUA AND RIDGEROCK

- Install Dedicated Left Turn Lane
- Improve Pedestrian Accessibility

SIDEWALK
STRIPING
EXISTING MEDIAN
MEDIAN
PAVEMENT
TREE
TRAFFIC SIGNAL

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RECOMMENDED SOLUTION - W. FUQUA AND W. RIDGECREEK

- Convert stop signs to traffic signal
- Install pedestrian crossing safety mechanism

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MEDIAN
PAVEMENT
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TRAFFIC SIGNAL

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APPINDEX B

Public Comment Summery and Public Comments Cards

		COMMENT CARD FEED BACK FOR (Fuqua)			
Name	**Address**	**Email**	**Date**	**Comments**	**Best contact**
Kenneth Collins	7419 W. Fuqua	kobepower3@gmail.com	21-Jul-15	There are currently two missing metal drainage grates on W. Fuqua before and after Fort Bend parkway. Please do not use metal grates for drainage. Parking issue on Fuqua once construction begins. The intersection @ W. Fuqua and Fondren has a high incidence of traffic accidents and fatalities with the new construction	email/mail
Mary & Michael Richards	15834 Algen	mrichards@uh.edu	21-Jul-15	Happy about the project , can't wait until it's complete. Let is know if we help.	email
Evelyn Barnett	15507 Willmore Ln, Missouri City, TX 77489	ebgarfield@sbcglobal.net	21-Jul-15	Please install "no parking sign" from Bagel Brook to Fondren street n both sides. Also consider posting speed limit signs. Only my suggestions.	
Shirley Lukan	7015 McCullum Rd.	shirleylukan@hhotmail.com	21-Jul-15	Major flooding during a heavy storm in the area of the library, almost flooded out my car . It was like a lake in May!	email
Jewel Simpson	7006 McCullen Rd		21-Jul-15	Why four more years before project is started?	
A.J. Colbert	6923 McCullen Missouri City, TX 77489	mister_avc@yahoo.com	21-Jul-15	Traffic police to use the constable Building as a temporary store front along w/precent 2 constable. Please consider "flooding" at W Fufea under the Beltway	email
Byylyn Barnett	15507 Wilmore W. Missouri City, TX 77489		21-Jul-15	Can we work with CM's office to open community parking in neighborhood facility (ie: temporary marking, etc.)	mail
			21-Jul-15	Metal grates for storm drains get stolen for scarp metal. What will you use that won't get stolen?	
O.A Lukan	7015 McCulen St. Missouri City, TX 77484		21-Jul-15	1.) Will there be lights at the park on Court Road and South Post Oak? 2.) Future flyers should include the highlights of will topics to be covered!! $22ml.	mail/phone
Ron Gardner	2340 Texas Parking, Mo City, TX 77489	rjgarrdner7@verizon.et	21-Jul-15	1.) will we loose any property or property adj? 2.) bus covering w/trash receptacles	mail/email
			21-Jul-15	Flooding near library. Pothole and major drainage issues at Independence and Fondren (?)	
"from audience"			21-Jul-15	New industrial path nearly complete in area, 18 wheelers will come down Fondren, have a hard time turning right onto Fugue without clipping corners at intersections during construction, concern about not being able to park near my house- lots of theft and cars broken into. Please work directly with residents and businesses on where to park during construction.	