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Memo

To: Members of Dublin City Council
From: Marsha I. Grigsby, City Manager *MIG*
Date: August 22, 2014
Initiated By: Terry D. Foegler, Director of Strategic Initiatives/Special Projects
Megan O'Callaghan, PE, Director of Public Service
Mandy K. Bishop, PE, Bridge Street District Consultant Program Manager
Re: Bridge Street District Area projects Planned for Possible Construction in 2015 –
Maintenance of Traffic Impact Planning

BACKGROUND

The City of Dublin has been advancing the planning and design for multiple transportation projects throughout the City, including projects in and near the Bridge Street District (BSD). The Ohio Department of Transportation (ODOT) has also been advancing the I-270/US 33 Interchange Improvement project, which is slated for construction to begin in March 2015. This memorandum represents the most current understanding of staff and our consultants of the traffic impacts -- both related to and among these projects. It is based upon the best and latest information available, but reflects the current level of completion of the planning and design phases for these projects (for example, the roundabout construction drawings are about 40% complete as of the writing of this memorandum). Plan development is continuing and is somewhat fluid, and new information continues to emerge regularly that will likely further impact and inform the maintenance of traffic planning.

The City received the draft I-270/US 33 Interchange Improvement plans from ODOT for review and comment in June of this year. This submission included the proposed maintenance of traffic plans for the project. With the I-270/US 33 maintenance of traffic plans now more defined, staff has moved forward with reviewing the plans, providing comments to ODOT in July and developing an understanding of the broader traffic impacts of the BSD Area Transportation Projects. As the I-270/US 33 Interchange project represents the most "regional" of the planned transportation improvements, with the largest volumes of impacted traffic, it was critical to first understand the impacts of the interchange construction project on local traffic.

It is important that the traffic impacts of these and other key related transportation projects be evaluated collectively in order to understand their cumulative impacts on the entire Dublin transportation system. In that context, the City of Dublin, City of Columbus and ODOT are advancing three (3) transportation projects that are planned to begin construction in 2015.

1. The I-270/US 33 Interchange Improvement (ODOT);
2. Dublin Road South Shared-Use Path (Dublin); and,
3. Hard Road & Sawmill Road Intersection (Dublin) and Hard Road Widening (Columbus).

Similarly, some of the key BSD Area Transportation Projects, in particular the Riverside Drive Realignment and the SR 161 & Riverside Drive Intersection Improvement (the Roundabout) have culminated in planning and design efforts that would permit their construction to proceed as early

as March 2015.

1. The Riverside Drive Realignment; and,
2. The SR 161 & Riverside Drive Intersection Improvement - Roundabout.

The attached *Bridge Street District Area Projects Planned for Construction in 2015* map shows the location of all of the projects being considered in this update.

PROJECT STATUS UPDATES

The current status of the projects that are planned for construction in 2015 in the BSD area is as follows:

- **I-270/US 33 Interchange Improvement (ODOT)**

This project consists of the reconstruction of the I-270/US 33 interchange in order to eliminate the weaves within the interchange and improve the operation of the interchange. The project involves major ramp and mainline US 33 bridge reconstructions, which impact the operation of existing ramps and US 33 through movements, forcing movement closures and detours throughout the construction.

Schedule & Plan Status

The project is anticipated to begin in March 2015 and last three (3) years. The project will begin with minor shoulder work and construction of pavement in the median for crossovers. The most impactful traffic phase of the project (outlined below) will begin no earlier than June 8, 2015 and is planned to last approximately four months. The construction plans for this project are approximately 90% complete.

Traffic Impacts

During this time period, US 33 eastbound and westbound through traffic will be detoured due to the reconstruction of the US 33 bridges over I-270. Additionally, US 33 westbound to southbound and I-270 southbound to US 33 eastbound movements will be closed and traffic detoured.

The project also includes closing I-270 overnight (no earlier than 10 p.m. to no later than 6 a.m.) for four (4) weekends in June, July, August and September 2015. Other short duration, intermittent closures are anticipated to occur for Post Road at the Frantz Road/SR 161 intersection. *The City of Dublin has requested that the closures do not occur during several special events, but if the work will occur during a specified special event, the City shall be notified 30 days in advance.*

- **Dublin Road South Shared-Use Path (City of Dublin)**

The project is the construction of a new shared-use path along the west side of Dublin Road between Rings Road and Waterford Drive. The construction of the shared-use path requires utilities to relocate as well as over 2,000 feet of stone wall reconstruction.

Schedule & Plan Status

The project has been planned to go to construction in June 2015, thereby closing a section of Dublin Road during the closure of the US 33 bridges over I-270. Since learning of the interchange maintenance of traffic plans, staff has increased efforts to move this project to construction in advance of ODOT's I-270/US 33 Interchange Improvement project. The construction plans are being finalized as property issues are resolved.

In order for this project to have the possibility of being constructed ahead of the US 33 bridges over I-270 closure of the I-270/US 33 Improvement project, the following must occur:

- Outstanding property acquisition with the remaining four (4) property owners must be resolved within the next three (3) weeks;
- Utilities must relocate in timely fashion in order to allow for construction to begin in March 2015 (winter storms and inclement weather could be a factor); and,
- The City will need to use incentivized construction bidding practices in order to maximize the probability of completing the project prior to June 8, 2015 (US 33 bridges over I-270 closure date) or with minimal overlap of the proposed closure of the US 33 bridges over I-270 as part of I-270/US 33 Interchange project.

Traffic Impacts

The project plans currently propose that only local traffic is maintained between Rings Road and Waterford Drive during the construction of this project. This, in effect, would close Dublin Road between Rings Road and Waterford Drive to through traffic, thereby reducing the ability of this roadway to provide a meaningful traffic alternative to the I-270/US 33 Interchange Improvement project if not completed before June 8, 2014. The closure of Dublin Road would overlap the proposed construction and possible closure of SR 161 and Riverside Drive intersection. However, it is the goal to have Dublin Road fully operational prior to the closure of US 33 bridges over I-270, thereby providing a meaningful alternative to the SR 161 and Riverside Drive Intersection Improvement and the closure of the US 33 bridges.

- **Hard Road & Sawmill Road Intersection (City of Dublin) and Hard Road Widening (City of Columbus)**

The project consists of capacity improvements at the Hard Road and Sawmill Road intersection as well as the widening of Hard Road east of the intersection. Each project is being developed by their respective sponsor, but will be bid by ODOT as a single project with two (2) parts.

Schedule & Plan Status

The proposed schedule per ODOT for the project is summarized below is for construction to begin May 25, 2015 and last through October 4, 2016. Right-of-way acquisition is nearing completion and the plans are being finalized.

Traffic Impacts

All traffic lanes are maintained on Sawmill Road and all traffic movements are maintained throughout the construction project, but in a reduced capacity on Hard Road. An eastbound left turn lane and the dedicated westbound right turn lane is eliminated during construction, therefore reducing the capacity of Hard Road. Generally, traffic will be maintained during construction with some lane restrictions on Hard Road.

This project is not near the I-270/US 33 interchange project and would not normally cause major traffic concerns for the City of Dublin. However, the queuing traffic related to the reduced capacity at the intersection of Hard Road and Sawmill Road during this construction project could impact the operation and performance of the Sawmill Road interchange, which in turn could impact operations on mainline I-270. When the US 33 bridges are closed over I-270, the Sawmill Road interchange becomes part of the detour for closed movements at the I-270/US 33 interchange and any impacts (i.e. queuing traffic) from the reconstruction of Hard Road and Sawmill Road will need to be closely monitored.

- **Riverside Drive Realignment (City of Dublin)**

The project is the relocation and improvement of Riverside Drive from I-270 to approximately Dale Drive. Because the project is on a new alignment east of existing Riverside Drive, the majority of the project can be constructed with minimal interruption to traffic. While maintenance of traffic plans have yet to be developed, it would be anticipated that short duration, intermittent traffic interruptions on existing Riverside Drive near the Tuller Road intersection would be required to complete the project.

Schedule & Plan Status

The project is anticipated to require one (1) construction season to be open to traffic with work outside the traffic lanes continuing into another construction season. Final design of the project started in June 2014 and Dublin staff is advancing the design so that construction can possibly begin as early as March 2015 (with the adjacent roundabout project). This project must be open to traffic in order for the proposed SR 161 and Riverside Drive Intersection roundabout to be fully functional. The design is developed to approximately 40% completion and as new information becomes available, construction durations will be re-evaluated.

- **SR 161 and Riverside Drive Intersection Improvement – Roundabout (City of Dublin)**

This project is the relocation of the SR 161 and Riverside Drive intersection and the complete reconstruction of the signalized intersection as a roundabout. The project requires four to ten feet of fill approximately 100 feet east of the existing intersection; includes private utility relocation, construction of AEP and DubLink duct bank, granite and other Bridge Street District finishes; and a new shared-use path connection south to Martin Road. This project is the most complex roundabout Dublin will have constructed, should this project be advanced. As a reminder, when the City affirmed the roundabout as the preferred solution to the intersection's needed capacity and safety enhancements, one of the key factors was the ability to avoid an entire SR 161 Scioto River bridge replacement, which many of the traditional intersection replacement alternatives evaluated would have required.

Schedule & Plan Status

Similar to the Riverside Drive Realignment, the SR 161 and Riverside Drive Intersection Improvement project is being advanced in order to allow construction to occur as early as March 2015. Design of the project started in June 2014 and the plans are currently developed to approximately 40%. The project is anticipated to require one (1) construction season to be open to traffic if a full closure is permitted while maintaining one (1) lane northbound and southbound on the bypass lane.

Traffic Impacts

The plans are being advanced from preliminary engineering through detailed design. At the time of this memorandum, and based upon the current level of plan completion, construction of the roundabout is anticipated to require a full closure of the SR 161 and Riverside Drive intersection for some period of time, likely one construction season (i.e. March through November). One (1) northbound and one southbound lane would be maintained on the bypass under the Bridge Street bridge over the Scioto River. Again, the consultant team and staff are continually evaluating construction durations and maintenance of traffic options as more design information develops.

Staff and the consultant team are advancing the construction documents in order to identify opportunities in construction sequencing that would:

- allow the project to maintain one (1) lane of traffic eastbound and westbound while opening the completed project to traffic in one (1) construction season;
- maintain safety for the traveling public and contractors; and,
- minimize cost implications.

Plans will need to progress further and be more detailed than 40% design – specifically, electrical and DubLink duct bank, utility locations and finishes need to be finalized to confidently evaluate and offer a one (1) construction season solution that maintains one (1) lane and (1) lane westbound on SR 161 for a portion of the construction project. We anticipate the plans will be to the required level of completion to address such issues in early October of 2014.

We do not currently believe there are any good alternatives that would provide for a more continuous level of traffic maintenance on SR161 through the roundabout construction area that would not lengthen the duration of construction. Maintaining traffic on SR 161 will provide substantial service level and traffic capacity reductions. Therefore, efforts should be made to complete the project in a timely fashion to restore capacity of full operation as soon as possible.

DISCUSSION OF CUMULATIVE AND OVERLAPPING IMPACTS OF BSD AREA PROJECTS

I-270/33 Interchange Improvement project will have the greatest impact on those working and driving in and around Dublin between June 8, 2015 and approximately the end of October 2015 with the closure of the following movements:

- US 33 eastbound and westbound through traffic;
- US 33 westbound to I-270 southbound; and,
- I-270 southbound to US 33 eastbound.

The posted primary detour routes will be via Frantz Road, the I-270/Sawmill Rd. and I-270/Tuttle Crossing Boulevard interchanges.

The **Dublin Road South Shared-Use Path** project and the associated closure of Dublin Road between Rings Road and Waterford Drive could overlap the I-270/US 33 Interchange Improvement, Riverside Drive Realignment and SR 161 and Riverside Intersection Improvement projects. If the construction of the project is not advancing ahead of the US 33 bridge closure over I-270, then this project should be delayed to permit a meaningful alternative route to both the I-270/US 33 Interchange Improvement, Riverside Drive Realignment and the SR 161 and Riverside Drive Intersection Improvement. Again, staff is working diligently to deliver this project ahead of the interchange project, but advance delivery is primarily contingent upon property acquisition resolution. We will keep Council informed on the status of this matter.

As discussed above, staff is advancing the design of the **Riverside Drive Realignment and SR 161 and Riverside Intersection Improvement** projects so that they can be ready for construction as early as March 2015. At the time of this memorandum, and based upon the current level of plan completion, construction of the roundabout is anticipated to require a full closure of the SR 161 and Riverside Drive intersection for a period of time. One (1) northbound and one (1) southbound lane would be maintained on the bypass under the Bridge Street bridge over the Scioto River.

Most Affected Routes

A high level review of the impact to the Dublin transportation network of the detoured traffic resulting from all projects has been completed. The review assumes that all projects discussed advance as planned in 2015. The team is currently developing four (4) impact evaluation scenarios, but in all scenarios the review shows that that the following locations will experience the highest traffic volumes and be the most impacted by the detours and closures:

- Avery-Muirfield Drive between Perimeter Loop Rd. to US 33 Ramps;
- Perimeter Drive between Avery-Muirfield Drive to Emerald Parkway;
- Emerald Parkway between Dublin Road to Riverside Drive (the bridge over the Scioto River);
- Frantz Road between Tuttle Road and SR 161/Bridge Street;
- Post Road between SR 161 and Emerald Parkway;
- Dublin Road from SR 161/Bridge St. to Emerald Parkway; and,
- US 33/ SR 161 from I-270/US 33 interchange east to Post Road.

Identification of the impacted routes is the first step to developing a comprehensive traffic mitigation plan that identifies locations that will require modified and optimized signal timings, proposes increased route signage and informs the maintenance of traffic communication plan.

Given the emerging construction schedules for 2015 (driven often by the lengths of the construction season), several activities will overlap. Staff and the consultant team currently believe that the simultaneous construction of both the interchange and roundabout projects should not present any unusual problems and may, in fact, provide some benefit. It is anticipated that the closure of the US 33 bridges over I-270 will likely provide some reduction to the volume of traffic on SR 161 through Dublin, east of the interchange, thereby disrupting less traffic than may have otherwise occurred through the roundabout project location. Staff and the consultant team also currently believe that if the Dublin Road South Shared-Use Path project cannot be advanced ahead of the I-270/US 33 and the SR 161 and Riverside Drive Intersection Improvement, Dublin Road should not be closed to through traffic at the same time as the US 33 bridges over I-270. The planned completion of the Emerald Parkway Phase 8 should provide relief for those traveling to and through the City. Emerald Parkway will provide connectivity from Tuttle Crossing Boulevard to Sawmill Road.

Staff understands these overlaps and their cumulative impacts will likely provide even greater transportation and traffic impacts for the City, and is working to minimize the duration of the construction projects and proposed traffic detours and closures by:

- Working closely with ODOT to develop plan notes, incentivized maintenance of traffic sequences and detour routes for the I-270/US 33 Interchange Improvement that minimize impacts to the City and offers formalized avenues for traffic coordination throughout the project;
- Growing our internal capacity by engaging a Program Management Consultant (PMC) team led by Mandy K. Bishop, PE of GPD Group. Mandy is responsible for the day-to-day management and coordination of all public infrastructure projects from design through construction within the BSD area as well as the maintenance of traffic evaluation.

- GPD Group retained Hill International, Inc., to provide construction scheduling services. Dan Weis serves as the team's master scheduler. Dan not only develops detailed project schedules to understand the coordination of projects for construction sequencing, but also so that the City fully understands project durations and therefore, the feasibility and timing of maintenance of traffic sequencing. He works to develop construction sequencing that minimizes construction durations and impactful maintenance of traffic phases. Understanding the construction sequencing is key to accurately evaluating maintenance of traffic scenarios.
- Advancing the Dale Drive-Tuller Ridge Connector into construction to provide a relief valve for traffic when the SR 161 and Riverside Drive intersection closes; and,
- Aggressively advancing the Dublin Road South project in order to attempt to construct the shared-use path prior to the anticipated closure of the US 33 bridges, should the project be advanced in 2015;
 - Success is contingent upon quick resolution to property acquisition and an overlap may still occur; and,
- Advancing the design of Riverside Drive Realignment and the SR 161 and Riverside Drive Intersection Improvement in order to identify construction sequencing and maintenance of traffic plan options that can reduce closure times, is safe and cost effective.
 - Based on 40% completion of design, staff currently believes that full closure presents the best opportunity for achieving a functional intersection within one (1) construction season;
 - Staff continues to explore options to provide a one (1) season construction solution that maintains one (1) lane eastbound and westbound in addition to one (1) lane northbound and southbound on the bypass; such a strategy cannot yet be confirmed, but further plan development will provide the answers. It is important to note that -- even if one lane of traffic in each direction can be maintained during most of the project construction period, the volume of traffic being accommodated though this intersection will represent a small portion of today's traffic volumes.
 - In all feasible maintenance of traffic scenarios for the SR 161 and Riverside Drive Intersection Improvement, some length of closure of eastbound and westbound traffic will be required to complete the center of the roundabout and in no case would left hand turning movements be maintained at the intersection. We will have a better understanding on the duration of this closure when plans are 60% complete in early October of this year
- Advancing a more detailed traffic analysis in order to more fully quantify delays and levels of service as well as offer optimized signal timing in the area impacted by construction.

NEXT STEPS

At Council's September 8, 2014 meeting, staff will present more detail and discussion of the schedule and construction sequencing drivers, emerging preferred strategies for construction and maintenance of traffic, the order of magnitude of the impacts of traffic due to the proposed

closures and/or lane reductions, and posted detour routes as well as timeframes for delivery of additional information as design advances.

In an effort to provide needed information to help make decisions regarding the advancement of these projects, staff and the PMC team will provide as much information as needed regarding the aggregated impacts of the projects and the timing of projects including closures and detours, and will:

- Develop more refined level of service and traffic impact information that is anticipated to be available in late **September 2014**;
- Advance construction plan development so that project and closure durations can better be defined within each project;
- Refine the preliminary schedule of BSD area projects to show project and closure durations in **early to mid-October 2014**, following the submittal of detailed design plans for the Riverside Drive Realignment and SR 161 and Riverside Drive Intersection Improvement; and
- Develop a comprehensive communication strategy to address the general public, as well as the specific needs of particular stakeholder groups.

RECOMMENDATION

Information only.

Bridge Street District Area Projects Planned for Construction in 2015

