BEACHWOOD CITY COUNCIL
SAFETY AND PUBLIC HEALTH COMMITTEE MEETING AGENDA
MONDAY, MARCH 2, 2020,
IMMEDIATELY FOLLOWING THE
ECONOMIC DEVELOPMENT COMMITTEE MEETING
at BEACHWOOD CITY HALL, COUNCIL CHAMBERS,
25325 Fairmount Boulevard, Beachwood, Ohio 44122

Justin Berns
James Pasch
Eric Synenberg
June E. Taylor

Agenda Items

1. Mayor's Report
2. ODOT Presentation
3. Any other matters coming before the Safety and Public Health Committee

# # #
Agenda

Brief Review of Project
Update on Current Status
Secured Funding to Date
New Developments in Funding Opportunities
Costs to Beachwood
Q&A
BRIEF REVIEW OF PROJECT
Operational Concerns

CUY-422/271 – 7.80/10.77
Chagrin Boulevard / Richmond Road Intersection
Split Phased Operation results in Capacity restrictions and inefficient operation

Richmond Road
- Lane configurations on Richmond Road and Chagrin Boulevard results in poor lane utilization which further limits capacity

I-271 Interchange
- Short exit lane to I-271 North is blocked which results in excessive and unnecessary traffic backups on Chagrin Boulevard for traffic destined north on I-271

Downstream lane assignments result in poor lane utilization

Split phased operation results in significant capacity restriction

Exit lane to 271 NB is too short and is blocked the majority of the time, resulting in unnecessary traffic backups
Operational Concerns

CUY-422/271 – 7.80/10.77

Existing Condition Photos

Richmond Road at Bryden Road looking South
• Note the Under Utilization of the ‘Left’ left turn lane – due to downstream lane utilization issues.

Richmond Road at Bryden Road looking North
• Note the line of traffic in the ‘left’ southbound lane – this traffic actually wants to turn left at Chagrin Boulevard

Richmond Road North of Bryden Road looking South
• Note the light at Bryden is green, yet left turn traffic for Chagrin is backed up through the intersection
Operational Concerns

Chagrin Blvd / Richmond Rd
No Build – Intersection Operations

Table 2: HCM Intersection Capacity Analysis Summary – Signalized Intersections – Opening Year 2022 & Design Year 2042 ‘No-Build’ Conditions

<table>
<thead>
<tr>
<th>Intersection / Movement</th>
<th>Opening Year 2022 Conditions</th>
<th>Design Year 2042 Conditions</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>AM Peak</td>
<td>PM Peak</td>
</tr>
<tr>
<td></td>
<td>LOS</td>
<td>Delay (sec)</td>
</tr>
<tr>
<td>Chagrin Boulevard / Richmond Road*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastbound Left</td>
<td>F</td>
<td>148.4</td>
</tr>
<tr>
<td>Eastbound Thru-Right</td>
<td>D</td>
<td>54.8</td>
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<tr>
<td>Eastbound Approach</td>
<td>E</td>
<td>67.5</td>
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<td>Westbound Left</td>
<td>C</td>
<td>22.3</td>
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<tr>
<td>Westbound Thru-Right</td>
<td>F</td>
<td>111.2</td>
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<tr>
<td>Westbound Approach</td>
<td>F</td>
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<td>Northbound Left</td>
<td>F</td>
<td>114.6</td>
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<tr>
<td>Northbound Thru-Right</td>
<td>F</td>
<td>92.6</td>
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<tr>
<td>Northbound Approach</td>
<td>F</td>
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</tr>
<tr>
<td>Southbound Left</td>
<td>F</td>
<td>137.4</td>
</tr>
<tr>
<td>Southbound Left-Thru</td>
<td>F</td>
<td>130.2</td>
</tr>
<tr>
<td>Southbound Right</td>
<td>E</td>
<td>61.9</td>
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<tr>
<td>Southbound Approach</td>
<td>F</td>
<td>109.0</td>
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<tr>
<td>Intersection Total</td>
<td>F</td>
<td>96.5</td>
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</table>

*Results reported based on HCM 2000 calculation outputs

Note: Orange highlighted cells indicate a Level of Service E. Red highlighted cells indicate a Level of Service F.

CUY-422/271 – 7.80/10.77

Existing Intersection Operations: Level of Service Table

- AM and PM Periods in the Opening Year and Design Year exhibit failing Levels of Service for nearly all movements.
- In the Design Year, the intersection is expected to experience nearly 3 minutes of overall delay with the worst individual movement experiencing over 5 minutes of delay.
Opational Concerns

CUY-422/271 – 7.80/10.77

Existing Condition Photos

Chagrin Boulevard at Richmond Road
Looking East
• Note the traffic completely blocking the
curb lane – traffic destined to I-271 North
and South prefer this lane.

Chagrin Boulevard at Park East Drive
Looking West
• Note all of the traffic in the curb lane or the
left turn lane and virtually no traffic in the
thru lane for Chagrin East.

Chagrin Boulevard at Park East Drive
Looking East
• Note the traffic back up in the curb lane –
as this is the preferred lane for I-271 North
traffic and EB Chagrin Boulevard traffic.
Proposed Countermeasures

• Remove the traffic signal at the Richmond Road / Bryden Road / Corporate Park Drive intersection & convert the side-street approaches to right-in, right-out.

• Widen the SB approach to the Chagrin Boulevard / Richmond Road intersection to five (5) lanes; left, left, thru, thru, right. Add appropriate destination signage.

• Construct a second NB left turn lane at Chagrin Boulevard / Richmond Road.

• Construct a WB right turn lane at Chagrin Boulevard / Richmond Road.

• Extend the 3rd EB travel lane west beyond the Richmond Road intersection.

• Widen the I-271 NB exit ramp to four (4) lanes; left, left, right, right. Add appropriate signage.

• Widen EB Chagrin Boulevard just west of Park East Drive to accommodate four thru lanes and a right turn lane.

• Widen WB Chagrin Blvd. to accommodate 3 travel lanes between Park East Drive and I-271 NB.

• Widen the Chagrin Boulevard Bridge over I-271 from four (4) lanes to six (6) lanes.

• Reconstruct all warranted traffic signals that will be impacted by the roadway widening.
Proposed Countermeasures
UPDATE ON CURRENT STATUS
Current Status

- Alternatives Study, Traffic Operations Study and Interchange Study have all been submitted to ODOT – Fall 2018.
- Spring 2019 – Safety Study (which was requesting construction funding) was pulled back from ODOT.
- Project had no activity until Spring of 2020.
## Changes in Safety Ranking since Project Start

### Table 1: ODOT Statewide Safety Listings

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<thead>
<tr>
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<td>Urban Intersection #31</td>
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<td>Urban Intersection #54</td>
<td>Urban Intersection #108</td>
<td>Urban Intersection #62</td>
<td>Urban Intersection #104</td>
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<td>Urban Intersection #270</td>
<td>Urban Segment #81</td>
<td>Urban Intersection #393</td>
<td>Urban Intersection #76</td>
<td>Urban Segment #208</td>
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<td>Urban Segment #255</td>
<td>Urban Segment #203</td>
<td>Urban Segment #42</td>
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<td>Urban Segment #16</td>
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<td>Urban Segment #216</td>
<td>Urban Segment #201</td>
<td>Urban Segment #428</td>
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<td>Urban Segment #383</td>
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<td>Urban Segment #1447</td>
<td>Urban Freeway #252</td>
<td>Urban Ramp #13</td>
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<tr>
<td>Urban Ramp #51</td>
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Crash Analysis Summary – Historic Comparison

### Crash History Comparison

<table>
<thead>
<tr>
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<th>2011 to 2013 Crash Year</th>
<th>2016 to 2018 Crash Year</th>
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<tbody>
<tr>
<td><strong>Total Number of Crashes</strong></td>
<td>311</td>
<td>424</td>
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<tr>
<td>Rear-End Crashes</td>
<td>189</td>
<td>241</td>
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<tr>
<td>Sideswipe – Passing Crashes</td>
<td>58</td>
<td>88</td>
</tr>
<tr>
<td>Angle Crashes</td>
<td>54</td>
<td>41</td>
</tr>
</tbody>
</table>

~ **37% Increase in Total Crashes**
~ **28% Increase in Rear-End Crashes**
~ **52% Increase in Sideswipe – Passing Crashes**

**CUY-422/271 – 7.80/10.77**

**Majority of Crashes are Rear-End**
- Indicative of congestion.

**Numerous Sideswipe – Passing Crashes**
- Occurring due to lane jockeying near intersections and lane changes that are necessary to reach desired destination.

**Large Number of Angle Crashes**
- Occurring at unsignalized site driveways
  - Attributable to high traffic volumes and drive impatience

**Conclusion** – Increase capacity where reasonably possible, reduce need for lane jockeying by establishing dedicated destination lanes on freeway approaches.
SECURED FUNDING TO DATE
Secured Funding Sources

- ODOT HSIP Funds - $532,000
- NOACA – STBG Resurfacing Funds - $433,850
NEW DEVELOPMENTS IN FUNDING OPPORTUNITIES
Funding Opportunities

- INFRA Grant
  - Infrastructure for Rebuilding America
  - Minimum request for “small project” - $5,000,000
  - Projects must be on the National Highway System (Chagrin meets this requirement)
  - Projects could be on the National Freight System (I-271 meets this requirement)
  - Applications were due on Feb. 25th.
  - Project scored a Benefit to Cost Ratio of 4.8 which fell into the highest category for scoring.
Funding Opportunities

- **BUILD Grant**
  - Better Utilizing Investment to Leverage Development Grant Program
  - Former “Tiger Grant” program
  - Minimum request for “urban project” - $5,000,000
  - Projects should have regional significance
  - Applications are due May 18th
  - Project scoring follows a similar benefit to cost analysis methodology as the INFRA grant.
Funding Opportunities

- TRAC Program
  - Transportation Review Advisory Council
  - Projects must add “new capacity” which this project does.
  - Projects must be larger than $12 Million
  - Program “came back to life” after the passage of the gasoline tax last year by Gov. DeWine.
  - Applications are due on May 31st.
Funding Opportunities

- ODOT HSIP (Safety Program)
  - 2020 is the “year of safety”
  - For 2020 – ODOT announced that all safety applications would be made at the 100% funding level
  - This means that applications that are approved would not have a local match for safety funds.
  - In projects with funding packages – local match requirements would still be required based on the other funding program requirements.
  - Applications due to ODOT D12 March 13, 2020
Application Recommendations

- Assuming the City wants to move forward with the project, we recommend the following applications:

1. Submit INFRA Grant (Complete) ($5,000,000)
2. Submit Build Grant ($5,000,000)
3. Submit TRAC Application (Amount TBD)
4. Update and Submit Safety Application ($10,000,000 total safety request)
Likely Cost to Beachwood
### Project Funding Plan

<table>
<thead>
<tr>
<th>Funding Type</th>
<th>Dollar Amount</th>
<th>% of Total</th>
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<tbody>
<tr>
<td>Secured Safety Funds:</td>
<td>$ 532,000.00</td>
<td>3.2%</td>
</tr>
<tr>
<td>Secured NOACA Funds:</td>
<td>$ 433,850.00</td>
<td>2.6%</td>
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<tr>
<td>New Federal Funds:</td>
<td>$ 12,574,151.00</td>
<td>76.9%</td>
</tr>
<tr>
<td>Local Funding:</td>
<td>$ 2,838,704.00</td>
<td>17.3%</td>
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<tr>
<td><strong>Total Project Cost:</strong></td>
<td>$16,378,705.00</td>
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</table>

- New Federal Funds category is comprised of New Safety Funds Request, INFRA Grant Funds, Build Grant Funds and TRAC Funds

- *This Year* ODOT Safety Funds could fund 100% of Design and R/W activities, meaning that no Beachwood City funds would be required until the Construction Phase in calendar 2024.
Questions?

- Chris Arrietta, P.E. - City of Beachwood Service Director
- Curtis J. Deibel, P.E. - GPD Group Traffic Engineer
- Kevin P. Westbrooks, P.E., PTOE - GPD Group Project Manager
- Ryan M. Gillespie, P.E., PTOE - GPD Group Traffic Operations Engineer
- Michael A. Hobbs, P.E., PTOE - GPD Group Principal in Charge
Proposed Countermeasures
Proposed Countermeasures

[Map of proposed countermeasures with legend]

- Proposed Bridge
- Existing Pavement
- Proposed Curb and Gutter
- Proposed Sidewalk
- Proposed Pavement
Proposed Countermeasures