



November 20, 2018

To: Rose LeSmith, Managing Engineer, Roads Division, King County DOT: rose.lesmith@kingcounty.gov

Re: GMVUAC Reply to KCDOT Response to GMVUAC Situation-Target-Proposal to Address 196th Ave SE Safety Issues — Service Request 28188

Ms. LeSmith,

Thank you very much for your November 2 Response to our May 8 Situation-Target-Proposal (STP) for the 196th Ave SE corridor.

We have carefully studied KCDOT's Response and include our Reply herein. We remain concerned with the safety along the 196th Ave SE corridor now serving as a feeder road to and a bypass from SR-169, while still serving local residents. This is especially more the case following the November 9 fatal accident at the 195th PI SE intersection.

Thank you for your due consideration of our reply herein.

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Traffic Safety Improvements 196th Ave SE
GMVUAC Reply to KCDOT Response to GMVUAC STP

Proposal 1.

GMVUAC STP:

For all of 196th Ave SE reclassify to Schedule 3 with a posted speed limit of 35 mph.

KCDOT Response:

The county has investigated these concerns and has performed a study of the 196th Ave SE corridor from SR-169 to SE Wax Rd. This study involved performing on-site observations and collecting field measurements, a detailed review of past collisions, collecting traffic speed counts, and evaluation of sight distances for curves and intersections to determine what changes can be implemented in the corridor. Any proposed changes must meet regulatory requirements in order to be implemented. Changes that meet regulatory requirements and are able to be implemented are known as 'warranted' changes.

The evaluation of 196th Ave SE from SR-169 to SE Petrovitsky Rd concluded that the posted speed limit of 40 mph is appropriate based on national engineering standards. The average speed on this segment was 43.8 mph. Between 2013 and 2017, there was a lower than average collision rate of 0.79 per million vehicle miles traveled. The average collision rate for similar roads is 1.7 per million vehicle miles traveled. The data show that a lower speed limit on this roadway is not currently warranted.

The segment of 196th Ave SE from SE Petrovitsky Rd to SE Wax Rd was also evaluated. The study results also concluded that the posted speed of 40 mph is appropriate. The average speed on this segment was 39.6 mph with an average collision rate of 1.45 per million vehicle miles (the average collision rate for similar roads is 1.7 per million vehicle miles traveled). Based on this data, a lower speed limit is not currently warranted on this roadway.

GMVUAC Reply:

Along the 196th Ave SE corridor the posted speed limit is 40 mph, with specific site-located Caution Speed Limits working down from 35 mph to 25 mph. However, to ensure driver and pedestrian safety, the speed limit must be a posted 35 mph throughout, since it is not safe to travel at the current base speed limit of 40 mph. This is especially true along this particular corridor, a "Minor Arterial," with "abutting land uses" served by the driveways less than 150-ft apart.

There are engineering methods recognized by the Federal Highway Administration (FHWA) that give support to lower speed limits where driveways have restricted visibility and limited sight distance. We cite the following from "Methods and Practices for Setting Speed Limits: An Informational Report," US DOT, FHWA, FHWA-SA-12-004, April 2012 (note our highlighting):

"...research on speed and crash occurrence fairly definitively indicates that, all other factors being equal, increased speeds increase crash occurrence."

"Most engineering approaches to speed limit setting are based on the 85th percentile speed—the speed at which 85 percent of free-flowing traffic is traveling at or below. The typical procedure is to set the speed limit at or near the 85th percentile speed of free-flow traffic. Adjustments to either increase or decrease the speed limits may be made depending on infrastructure and traffic conditions."

"The 85th percentile speed can be adjusted on the basis of engineering and traffic investigation. The following are typical adjustments made by several States:

- * *Adjustments made for roadway factors and/or crash data may be lower than the 85th percentile speed, but normally no more than 7 mph (11 km/h) lower.*

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- * *Adjustments or roadway factors may reduce the 85th percentile speed by as much as 10 mph (16 km/h) below the 85th percentile speed based on sound and generally accepted engineering judgment that includes consideration of the following factors:*
 - * *Narrow roadway pavement widths (20 feet (6 m) or less, for example).*
 - * *Horizontal and vertical curves (possible limited sight distance).*
 - * *Driveways with restricted visibility and other developments (possible limited sight distance).*
 - * *High driveway density (the higher the number of driveways, the higher the potential for encountering entering and turning vehicles). Rural residential or developed areas (higher potential for pedestrian and bicycle traffic).*
 - * *Narrow shoulder widths (constricted lateral movement).*
- * *If the crash rate for a two-year period is much higher than the average for other highways of similar classifications, adjustments are considered.*
- * *Adjustments can be made based on crash data when enforcement agencies will assure a degree of enforcement that will make the speed zone effective.*
- * *A 12 mph (20 km/h) reduction for locations where roadway factors and crash rates are higher than the statewide average.”*

We request KCDOT, in its assessment and analyses for the 196th Ave SE corridor, ensure these methods and factors receive all possible attention.

We are especially intrigued by the safety-oriented “*Injury Minimization*” methodology employed in Sweden and Australia that would suggest use of a 30-mph speed limit. We request KCDOT takes that into account to give greater weight to local resident safety over the mobility desires of through traffic.

Proposal 2.

GMVUAC STP:

In the vicinity of SE 170th St intersection reduce speed limit to 35 mph.

KCDOT Response:

The county investigated the concerns regarding sight restrictions and signage at SE 170th St. Adequate entering sight distance is available for the posted speed limit of 40 mph and for the average speed of traffic. The majority of motorists are traveling at or below 50.1 mph and the entering sight distance at this location is adequate. Enforcement is the primary means of ensuring traffic slows to at or near the posted speed limit of 40 mph. The King County Sheriff’s Office is the only agency who can provide traffic enforcement for unincorporated roadways. You can report speeding and request enforcement at <http://www.kingcounty.gov/safety/sheriff/ReportToSheriff/TrafficComplaints.aspx>. With respect to advance warning signs at SE 170th St, signs depicting the intersection have been in place since 2012 and placards with the street name were added in March 2018.

Collision data examined from 2013 through 2017 for SE 170th St shows there was only one reported collision at this intersection in the most recent 5-yr period. This collision was not speed related, rather, it involved a motorcycle rear-ending a northbound vehicle that was stopped to turn left at SE 170th St. The frequency of collisions, 0.11 per million, is very low, demonstrating that a reduced speed limit at SE 170th St is not warranted.

GMVUAC Reply:

While we understand what is stated in the King County Road Design and Construction Standards about sight distance and that the Sheriff’s Office handles speed-limit enforcement, we still believe,

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due to the unique aspects of 196th Ave SE in the vicinity of SE 170th St intersection, the Speed Caution Limit must be reduced to 30 mph.

Proposal 3.

GMVUAC STP:

In the vicinity of 195th PI SE intersection reduce speed limit to 25 mph; add rumble strips (this already has been done in the vicinity of SE 192nd St); and add “*Hidden Road*” signage. If this cannot be done over the next several months, southbound ingress / northbound egress should be discontinued. Long term, should studies recommend it and funds become available, rebuild the intersection.

KCDOT Response:

While collision data do not support the need to rebuild the intersection at 195th PI SE, the county will instead install advance intersection warning signs with 35 mph advisory speed placards at this location. We will monitor the intersection to determine if rumble strips may be needed to be installed in the future.

195th PI SE is one of three access points from neighborhoods west of 196th Ave SE. Alternative access is provided at SE 162nd St and SE 170th St. Given the residential, low volume nature of 195th PI SE and the low 5-yr collision history, this intersection does not warrant improvements. The county instead recommends residents use the intersections of SE 162nd St or SE 170th St to exit the neighborhood. A school bus stop ahead symbol sign was installed for both northbound and southbound approaches to 195th PI SE in May 2017. This is considered adequate warning to supplement the flashing school bus lights.

GMVUAC Reply:

The fatal accident at this intersection on November 9 prompts immediate action.

Vehicles turning left take ~3 sec to clear oncoming Southbound traffic. Vehicle sight range is ~150 ft. A vehicle at 40 mph travels at about 58 ft/sec times 3 sec = 174 ft, clearly dangerous even when road conditions are good. KCDOT 196th Ave SE study reflects speeds from 50.1 mph. At this rate of speed, the distance closure is 73.5 ft/sec. This amounts to 2 sec of reaction time. In this instance a Cautionary sign must be posted at 30 mph.

Vehicles traveling Northbound on 196th Ave SE turning left onto 195th PI SE accelerate when they see no southbound vehicles approaching from up the 9% grade. They do this due to the short amount of time to cross over the Southbound lane onto 195th PI SE. The speed limit on 195th PI SE is 25 mph and cars have to speed by the signage at a high rate of speed to be safe. Right turns from 195th PI SE onto 196th Ave SE are dangerous and acceleration must be immediate to avoid being rear-ended. Near misses are almost a daily occurrence.

Mr. Deutschman's driveway, among others, is approximately 200 ft South of this intersection. His son's car was struck in the front end while turning South onto 196th. His son was not ticketed for failing to yield the right of way. The officer understood the issue of sight distance and speed at this location. Mr. Deutschman has witnessed several accidents at or near this intersection—all due to the high posted speed of 40 mph and inadequate sight distance.

We recommend KCDOT take the following steps in order of decreasing priority:

- A. Close 195th PI SE and reduce the speed limit on 196th Ave SE to 35 mph from SR 169 until the passing of Shadow Lake area;
- B. To improve safety, while keeping 195th Ave SE open, install a 3-way stop to enable everyone to make clear and safe turns at all hours of the day. Note that similar controls

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exist at the intersection of Summit-Landsburg Road / SE 153rd St, for similar reasons, but in this case, only *two* approaches stop as one approach has clear sightlines. Also add rumble strips and “*Stop Ahead*” signs. Also, reduce the speed limit on 196th Ave SE to 35 mph from SR 169 until the passing of Shadow Lk area; or

- C. The reduction from 40 mph to 35 mph will greatly enhance resident safety with driveways less than 150-ft apart as provided for Arterial Streets.

Proposal 4.

GMVUAC STP:

In the vicinity of SE 188th St intersection eliminate passing lane.

KCDOT Response:

At the SE 188th St intersection, the short section of passing lane striping will be modified to a no passing zone with double yellow center line. The county will also eliminate the passing lane near SE 188th St.

GMVUAC Reply:

We agree, thank you.

Proposal 5.

GMVUAC STP:

Between SE 192nd St and SE 196th St reduce speed limit to 30-mph on the “S” curve.

KCDOT Response:

Between SE 192nd St and SE 196th St, the county will install advisory speed placards to indicate that a slower speed is needed to navigate these curves. In addition, advisory speed placards will (be) installed between SE 192nd St and SE 196th St.

GMVUAC Reply:

As stated earlier, we believe the base speed limit along the 196th Ave SE corridor must be reduced from 40 mph to 35 mph and the Speed Caution Limit on the Southbound Lane Between SE 192nd St and SE 196th St be posted at 30 mph.

Proposal 6.

GMVUAC STP:

In the vicinity SE 213th St reduce speed limit to 20 mph (or less) on the 90-deg curve.

KCDOT Response:

In 2016, King County identified SE 213th St as a High-Collision Location and installed high friction surface treatment to the surface of the roadway in 2017. As part of the High-Collision Location program, we will continue to monitor this intersection and curve. In response to your concerns about the curve, we reviewed this location using a ball-bank indicator to determine the degree to which a vehicle is experiencing force around the curve. The results of this study show that the posted advisory

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speed of 25 mph is appropriate according to national engineering standards. The county will monitor SE 213th St to see if the high-friction surface treatment that was installed is working as an effective anti-skid treatment. If the high-friction surface treatment does not yield the desired reduction in crashes we will consider installing a radar-speed-feedback sign at this location.

GMVUAC Reply:

We agree, thank you.