

# Traffic Impact Studies

## Traffic Engineer's Statement

The attached traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.

Max Rusch  
\_\_\_\_\_  
*Max Rusch P.E. #55895*

10-10-22  
\_\_\_\_\_  
Date

## Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

  
\_\_\_\_\_  
*Brian Kearney, Senior Development Manager*  
*Self-Storage Division*  
*Johnson Development Associates, Inc.*  
*101 N. Pacific Coast Hwy, Suite 308 El Segundo, CA 90245*

9/16/22  
\_\_\_\_\_  
Date



To: Elizabeth Nijkamp  
Engineer Manager, El Paso County

From: Brian Horan, PE

Date: April 11, 2022  
Revised: June 10, 2022  
Revised: July 12, 2022  
Revised: August 11, 2022  
Revised: September 13, 2022

Re: **Constitution Storage: Traffic Memorandum; PCD No. P-225  
El Paso County, CO**

### INTRODUCTION

This memorandum provides the results of a traffic analysis performed in support of an approximately 3.72-acre lot located in El Paso County, Colorado. Generally, the site is located south of Constitution Avenue, east of Peterson Road, and west of Canada Drive. The site is further identified as El Paso County parcel number 5405218002 and is currently vacant. The site location is shown on Figure 1.

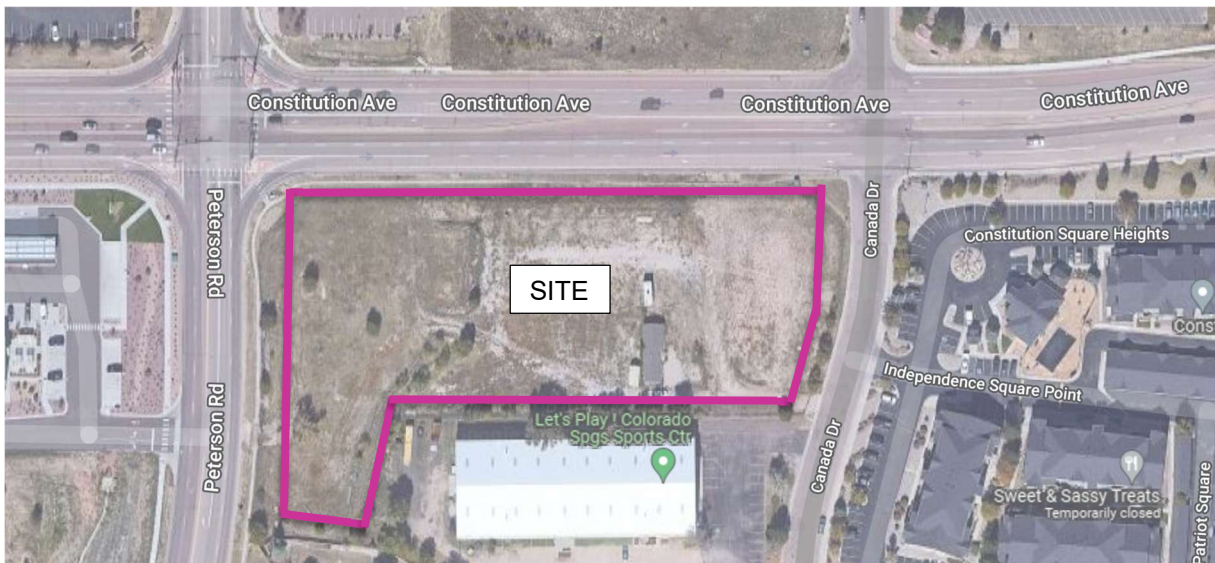


Figure 1 – Site Location

The Applicant, Johnson Development Associates, proposes to develop the site with a 109,033 square foot self-storage (mini warehouse) use with 944 storage units. A full-sized copy of the site plan is provided as Attachment I. The following memorandum has been prepared for the County of El Paso as requested. The purpose is to determine the traffic forecasted by the proposed project and potential impacts to the surrounding roadways. A narrative for the study area for adjacent roadways, intersection and accesses is provided in the existing conditions section below.



## EXISTING CONDITIONS

As shown on the site plan provided as Attachment 1, the site is proposed to be accessed via one right-in/right-out (RIRO) movement access along Peterson Road and one full movement access along Canada Drive. Peterson Road and Constitution Avenue provide regional access to the property. No roadway improvements were identified in the area.

Constitution Avenue is constructed as a four-lane roadway divided by a raised median and auxiliary turn lanes provided at intersections. It is classified as an arterial by El Paso County and provides east-west connectivity throughout the region with a posted speed limit of 45 mph in the vicinity of the subject site. The intersection of Constitution Avenue/Peterson Road operates under signalized control and the intersection of Constitution Avenue/Canada Drive operates under unsignalized control.

Peterson Road is constructed as a four-lane roadway divided by a two way left turn (TWLT) lane. It is classified as a minor arterial by El Paso County and provides north-south connectivity throughout the region with a posted speed limit of 35 mph in the vicinity of the subject site. The intersection of Peterson Road/Constitution Avenue operates under signalized control.

Canada Drive is constructed as an undivided two-lane roadway. It is classified as a local roadway by El Paso County and primarily provides north-south access to a number of residential units in the region with a posted speed limit of 25 mph in the vicinity of the subject site. The intersection of Canada Drive/Constitution Avenue operates under unsignalized control. ADTs and peak hour traffic along this roadway are consistent with the roadway section and operates with additional capacity available.

The Major Transportation Corridor Plan (MTCP) was reviewed to determine if any roadway improvements were anticipated in the immediate study area. No such improvements were identified. Additionally, at the time of this writing, no improvements from area development were identified that would impact the proposed development.

Streetlight was used to generate turning movement counts at the intersection of Peterson Rd & Constitution Ave. Streetlight is a program that collects locations records from smartphones as well as connected cars and trucks and can use this data to produce turning movement counts. The Streetlight turning movements were then balanced with ADT counts on the MS2 website, taken in 2021. Figure 2 shows the existing volumes at the intersection of Peterson Rd & Constitution Ave.

Table 1

JDA - Constitution Storage

Site Trip Generation

| Land Use   | Land Use Code | Amount | Units | AM Peak Hour |     |       | PM Peak Hour |     |       | Average Daily Trips |
|--|---------------|--------|-------|--------------|-----|-------|--------------|-----|-------|---------------------|
|  |               |        |       | In           | Out | Total | In           | Out | Total |                     |
| <i>Proposed</i> <sup>(1)</sup><br>Mini-Warehouse | 151           | 944    | UNITS | 6            | 5   | 11    | 8            | 8   | 16    | 170                 |

Note(s):

(1) Trip generation based on the Institute of Transportation Engineers' Trip Generation Manual, 11th Edition

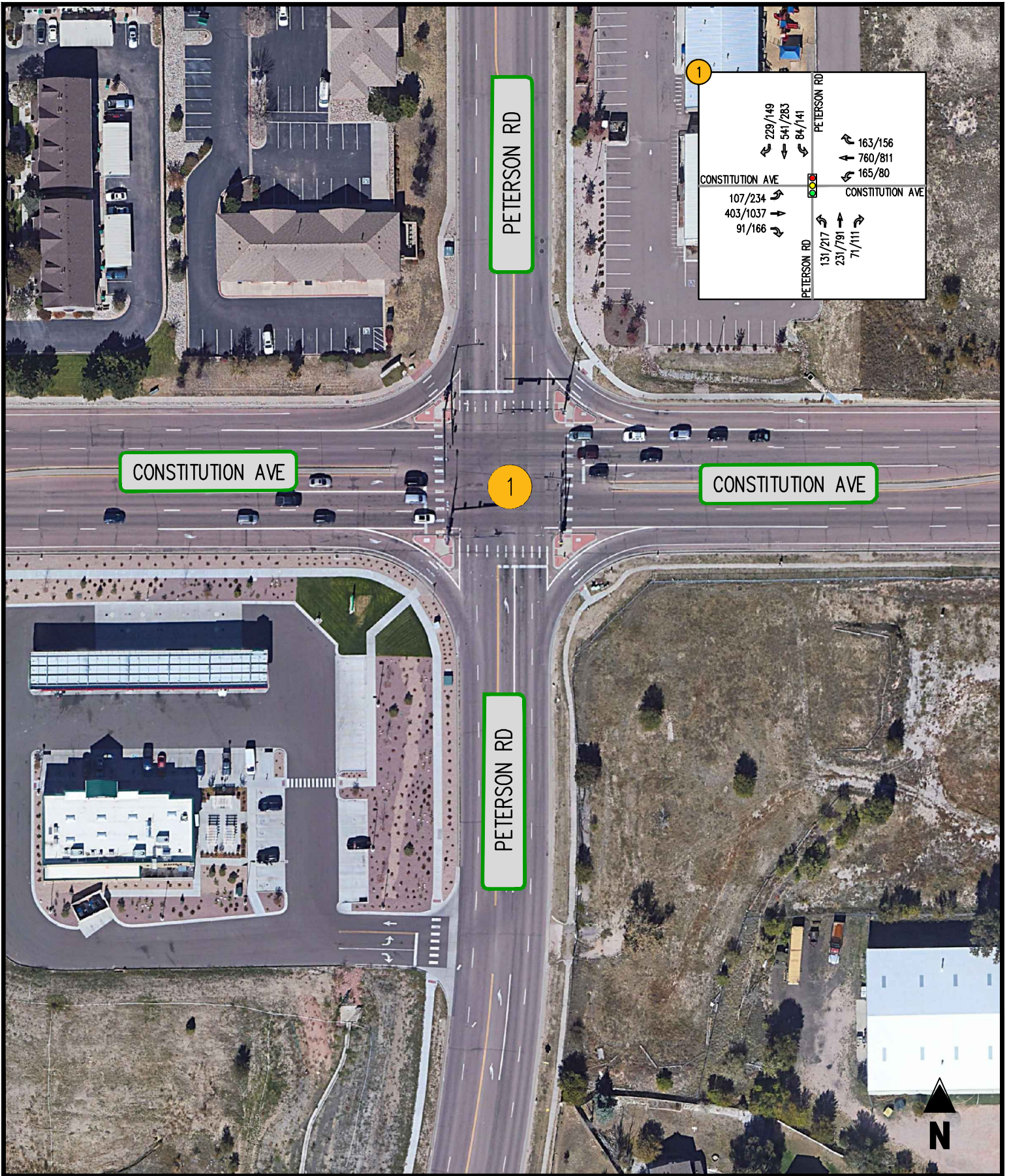


FIGURE 2  
Existing Volumes

0000/0000 (AM PEAK HOUR/PM PEAK HOUR)

- ← MOVEMENT
- 🚦 SIGNALIZED INTERSECTION
- 🛑 STOP SIGN
- 🚧 YIELD SIGN



## TRIP GENERATION

Trip generation forecasts for the site were based on rates/equations published in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition and industry standard methodologies. The trip generation of the proposed development are provided in Table 1 below. The use is expected to generate 11 AM peak hour, 16 PM peak hour, and 170 average daily trips upon completion.

These trips would be divided among the two access points along Peterson Road and Canada Drive. This would represent less than 10 vehicles at any site entrance in or out of the site during the peak hour. As required by the County, an assessment of 20 year projections for this area would suggest minimal increase. Limited development or redevelopment options exist in the area that would increase traffic at the proposed entrances. It is anticipated that short and long range forecasts at the entrance would remain relatively consistent with existing conditions.

As mentioned above, the Applicant is proposing one RIRO movement access to the site via Peterson Road and one full movement access to the site via Canada Drive. Currently, Constitution Avenue has auxiliary lanes in both the east and westbound directions at the Canada Drive intersection. Based on the trip generation contained herein, the proposed development would not significantly impact the surrounding corridor.

## PROPOSED ACCESS LOCATIONS

As shown in Attachment I, the project proposes a full movement access along Canada Drive and a right-in/right-out access along Peterson Road. As shown in Table 1, the site would generate very few peak hour trips. Assuming some distribution of trips to the entrances, the accesses and surrounding intersections would experience fewer than 5 peak hour turning movements at any location. The access at Peterson Road was requested to be specifically addressed. Due to the low traffic to the proposed site the entrance would operate exceptionally during all times. No conflicts with the nearby signalized intersection at Peterson Road and Constitution Avenue would occur. The proposed right-in/right-out entrance would draw from the same lane as the northbound right at the signal.

The signal of Peterson Rd & Constitution Ave was modeled in Synchro using the volumes from Figure 2. The Synchro reports have been attached to this memo. The 95% queue for the northbound right turn movement, as reported by Synchro, will extend 2 feet in the AM peak hour and 36 feet in the PM peak hour. As the proposed access along Peterson Rd will be situated approximately 250 feet south of the signal, there is little chance of the northbound right turn queue blocking the access.

## SAFETY

As requested by the County, accident data in the area was pulled as provided by the State. As shown in Figure 3 below, no accidents were reported in this area for the last 10 years. Due to the extremely low generation of trips the proposed use represents it is not anticipated to have an impact on safety to this area.

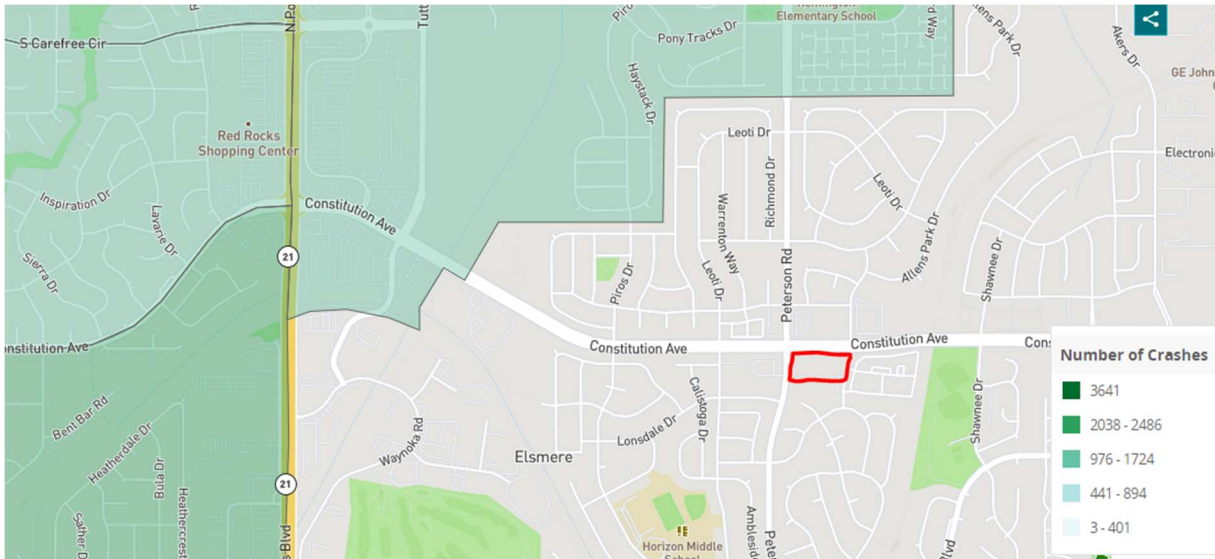


Figure 3 – Police Accident Data Map 2016-2022

Considerations for sight distance were also made at the proposed access along Peterson Road. Sight distance triangles are provided in Attachment 1. As shown on Attachment 1, sight distance at the intersection is available well beyond the required length due to the gradual curve in the roadway. No safety concerns are anticipated with the approval of the access along Peterson Road.

An autoturn analysis is also provided in Attachment 1. A WB 67 – Interstate Semi Trailer was utilized for this analysis. Although this vehicle is unlikely to ever be onsite it is the largest vehicle allowed on Colorado roads. Per CDOT freight and permitting specifications, “Colorado’s legal height limit is 14 foot 6 inches. All state highway structures with less than 14-foot, 6-inch vertical clearance may be found on the Vertical Clearances Map. Maximum width is 8’6” and legal weight is 80,000 pounds combined gross vehicle weight (GVW) on Interstate and 85,000 pounds on Non-Interstate highways. There is no overall length requirement for truck tractor semitrailer combinations as long as the trailer does not exceed 57 feet 4 inches.” The WB 67 is the worst case vehicle for Colorado State roads and therefore was selected for the analysis.

## CONCLUSIONS

The conclusions of this analysis are as follows:

1. The subject site is a standalone project in the County of El Paso, Colorado.
2. The proposed project is forecasted to generate 11 new AM trips, 16 new PM trips, and 170 new daily trips on average.
3. Auxiliary lanes current exists in both the east and westbound directions on Constitution Avenue at Canada Drive.
4. Based on the trip generation contained herein, the proposed mini warehouse use development would not significantly impact the surrounding roadways. Short and long range forecasts for the access locations would remain generally consistent with existing conditions.
5. No improvements are required or recommended above and beyond what is required on site for the construction of the use.

6. No safety concerns are anticipated with the approval of the access locations as shown.
7. Road Impact Fees will be due by the Applicant at the last land use approval consistent with the use and Impact Fee schedule.

We trust that the information contained herein satisfy the request of the County of El Paso, Colorado. If you have any questions or need further information, please contact Brian Horan at [BrianHoran@GallowayUS.com](mailto:BrianHoran@GallowayUS.com) or 303-770-8884.



**Attachment I**  
**Site Plan**  
**Synchro Reports**



Existing AM  
Peterson Rd & Constitution Ave



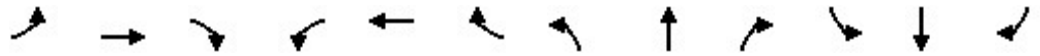
| Lane Group              | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 116  | 438  | 99   | 179  | 826  | 177  | 142  | 251  | 77   | 91   | 588  | 249  |
| v/c Ratio               | 0.29 | 0.35 | 0.15 | 0.31 | 0.63 | 0.25 | 0.55 | 0.29 | 0.16 | 0.23 | 0.74 | 0.58 |
| Control Delay           | 16.0 | 29.6 | 2.2  | 15.7 | 33.6 | 4.6  | 33.4 | 36.9 | 0.9  | 25.8 | 49.3 | 29.4 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 16.0 | 29.6 | 2.2  | 15.7 | 33.6 | 4.6  | 33.4 | 36.9 | 0.9  | 25.8 | 49.3 | 29.4 |
| Queue Length 50th (ft)  | 41   | 130  | 0    | 66   | 273  | 0    | 74   | 82   | 0    | 46   | 224  | 103  |
| Queue Length 95th (ft)  | 80   | 175  | 17   | 118  | 342  | 46   | 113  | 115  | 2    | 77   | 271  | 179  |
| Internal Link Dist (ft) |      | 691  |      |      | 661  |      |      | 589  |      |      | 420  |      |
| Turn Bay Length (ft)    | 250  |      |      | 250  |      |      | 230  |      | 50   | 160  |      | 50   |
| Base Capacity (vph)     | 404  | 1253 | 648  | 576  | 1312 | 698  | 277  | 897  | 502  | 503  | 958  | 500  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.29 | 0.35 | 0.15 | 0.31 | 0.63 | 0.25 | 0.51 | 0.28 | 0.15 | 0.18 | 0.61 | 0.50 |

Intersection Summary

Existing AM  
Peterson Rd & Constitution Ave

| Movement  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations   |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)  | 107  | 403  | 91   | 165  | 760  | 163  | 131  | 231  | 71   | 84   | 541  | 229  |
| Future Volume (veh/h)   | 107  | 403  | 91   | 165  | 760  | 163  | 131  | 231  | 71   | 84   | 541  | 229  |
| Initial Q (Qb), veh   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)   | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus, Adj  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach   |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Adj Sat Flow, veh/h/ln  | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h  | 116  | 438  | 0    | 179  | 826  | 0    | 142  | 251  | 0    | 91   | 588  | 0    |
| Peak Hour Factor  | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, %  | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Cap, veh/h  | 441  | 1630 |      | 624  | 1689 |      | 235  | 795  |      | 344  | 710  |      |
| Arrive On Green   | 0.10 | 0.46 | 0.00 | 0.11 | 0.48 | 0.00 | 0.08 | 0.22 | 0.00 | 0.06 | 0.20 | 0.00 |
| Sat Flow, veh/h   | 1781 | 3554 | 1585 | 1781 | 3554 | 1585 | 1781 | 3554 | 1585 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h  | 116  | 438  | 0    | 179  | 826  | 0    | 142  | 251  | 0    | 91   | 588  | 0    |
| Grp Sat Flow(s),veh/h/ln  | 1781 | 1777 | 1585 | 1781 | 1777 | 1585 | 1781 | 1777 | 1585 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s   | 3.7  | 9.1  | 0.0  | 5.7  | 19.1 | 0.0  | 7.5  | 7.1  | 0.0  | 4.8  | 19.0 | 0.0  |
| Cycle Q Clear(g_c), s   | 3.7  | 9.1  | 0.0  | 5.7  | 19.1 | 0.0  | 7.5  | 7.1  | 0.0  | 4.8  | 19.0 | 0.0  |
| Prop In Lane  | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Lane Grp Cap(c), veh/h  | 441  | 1630 |      | 624  | 1689 |      | 235  | 795  |      | 344  | 710  |      |
| V/C Ratio(X)  | 0.26 | 0.27 |      | 0.29 | 0.49 |      | 0.60 | 0.32 |      | 0.26 | 0.83 |      |
| Avail Cap(c_a), veh/h   | 441  | 1630 |      | 624  | 1689 |      | 294  | 814  |      | 521  | 962  |      |
| HCM Platoon Ratio   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)  | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh  | 14.2 | 20.1 | 0.0  | 12.7 | 21.5 | 0.0  | 35.5 | 38.9 | 0.0  | 35.2 | 46.0 | 0.0  |
| Incr Delay (d2), s/veh  | 1.5  | 0.4  | 0.0  | 1.2  | 1.0  | 0.0  | 2.5  | 0.2  | 0.0  | 0.4  | 4.5  | 0.0  |
| Initial Q Delay(d3),s/veh   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln  | 1.6  | 3.7  | 0.0  | 2.3  | 7.7  | 0.0  | 3.4  | 3.1  | 0.0  | 2.1  | 8.8  | 0.0  |
| Unsig. Movement Delay, s/veh  |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh  | 15.7 | 20.5 | 0.0  | 13.9 | 22.5 | 0.0  | 38.0 | 39.1 | 0.0  | 35.6 | 50.6 | 0.0  |
| LnGrp LOS   | B    | C    |      | B    | C    |      | D    | D    |      | D    | D    |      |
| Approach Vol, veh/h   |      | 554  | A    |      | 1005 | A    |      | 393  | A    |      | 679  | A    |
| Approach Delay, s/veh   |      | 19.5 |      |      | 21.0 |      |      | 38.7 |      |      | 48.5 |      |
| Approach LOS  |      | B    |      |      | C    |      |      | D    |      |      | D    |      |
| Timer - Assigned Phs  | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s  | 11.1 | 31.4 | 18.0 | 59.5 | 14.0 | 28.5 | 16.0 | 61.5 |      |      |      |      |
| Change Period (Y+Rc), s   | 4.5  | 4.5  | 4.5  | 4.5  | 4.5  | 4.5  | 4.5  | 4.5  |      |      |      |      |
| Max Green Setting (Gmax), s   | 18.5 | 27.5 | 13.5 | 42.5 | 13.5 | 32.5 | 11.5 | 44.5 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s  | 6.8  | 9.1  | 7.7  | 11.1 | 9.5  | 21.0 | 5.7  | 21.1 |      |      |      |      |
| Green Ext Time (p_c), s   | 0.1  | 1.4  | 0.2  | 2.8  | 0.1  | 2.9  | 0.1  | 5.5  |      |      |      |      |
| <b>Intersection Summary</b>   |      |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay  |      |      | 30.4 |      |      |      |      |      |      |      |      |      |
| HCM 6th LOS   |      |      | C    |      |      |      |      |      |      |      |      |      |
| <b>Notes</b>  |      |      |      |      |      |      |      |      |      |      |      |      |
| Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay. |      |      |      |      |      |      |      |      |      |      |      |      |

Existing PM  
Peterson Rd & Constitution Ave



| Lane Group              | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 254  | 1127 | 180  | 87   | 882  | 170  | 236  | 860  | 121  | 153  | 308  | 162  |
| v/c Ratio               | 0.73 | 0.76 | 0.24 | 0.44 | 0.74 | 0.26 | 0.55 | 0.87 | 0.22 | 0.71 | 0.36 | 0.31 |
| Control Delay           | 35.5 | 33.8 | 4.5  | 23.8 | 39.9 | 4.8  | 29.8 | 52.2 | 5.1  | 44.7 | 38.8 | 5.8  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 35.5 | 33.8 | 4.5  | 23.8 | 39.9 | 4.8  | 29.8 | 52.2 | 5.1  | 44.7 | 38.8 | 5.8  |
| Queue Length 50th (ft)  | 118  | 384  | 4    | 34   | 316  | 0    | 122  | 330  | 0    | 75   | 104  | 0    |
| Queue Length 95th (ft)  | #242 | 470  | 47   | 62   | 394  | 44   | 186  | 412  | 36   | #152 | 146  | 44   |
| Internal Link Dist (ft) |      | 691  |      |      | 661  |      |      | 589  |      |      | 420  |      |
| Turn Bay Length (ft)    | 250  |      |      | 250  |      |      | 230  |      | 50   | 160  |      | 50   |
| Base Capacity (vph)     | 350  | 1483 | 763  | 198  | 1188 | 649  | 441  | 1017 | 552  | 219  | 880  | 526  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.73 | 0.76 | 0.24 | 0.44 | 0.74 | 0.26 | 0.54 | 0.85 | 0.22 | 0.70 | 0.35 | 0.31 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Existing PM  
Peterson Rd & Constitution Ave

| Movement  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations   |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)  | 234  | 1037 | 166  | 80   | 811  | 156  | 217  | 791  | 111  | 141  | 283  | 149  |
| Future Volume (veh/h)   | 234  | 1037 | 166  | 80   | 811  | 156  | 217  | 791  | 111  | 141  | 283  | 149  |
| Initial Q (Qb), veh   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)   | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus, Adj  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach   |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Adj Sat Flow, veh/h/ln  | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h  | 254  | 1127 | 0    | 87   | 882  | 0    | 236  | 860  | 0    | 153  | 308  | 0    |
| Peak Hour Factor  | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, %  | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Cap, veh/h  | 401  | 1586 |      | 251  | 1290 |      | 438  | 955  |      | 227  | 834  |      |
| Arrive On Green   | 0.14 | 0.45 | 0.00 | 0.05 | 0.36 | 0.00 | 0.11 | 0.27 | 0.00 | 0.08 | 0.23 | 0.00 |
| Sat Flow, veh/h   | 1781 | 3554 | 1585 | 1781 | 3554 | 1585 | 1781 | 3554 | 1585 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h  | 254  | 1127 | 0    | 87   | 882  | 0    | 236  | 860  | 0    | 153  | 308  | 0    |
| Grp Sat Flow(s),veh/h/ln  | 1781 | 1777 | 1585 | 1781 | 1777 | 1585 | 1781 | 1777 | 1585 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s   | 9.6  | 30.9 | 0.0  | 3.6  | 25.2 | 0.0  | 11.7 | 28.0 | 0.0  | 7.7  | 8.7  | 0.0  |
| Cycle Q Clear(g_c), s   | 9.6  | 30.9 | 0.0  | 3.6  | 25.2 | 0.0  | 11.7 | 28.0 | 0.0  | 7.7  | 8.7  | 0.0  |
| Prop In Lane  | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Lane Grp Cap(c), veh/h  | 401  | 1586 |      | 251  | 1290 |      | 438  | 955  |      | 227  | 834  |      |
| V/C Ratio(X)  | 0.63 | 0.71 |      | 0.35 | 0.68 |      | 0.54 | 0.90 |      | 0.68 | 0.37 |      |
| Avail Cap(c_a), veh/h   | 401  | 1586 |      | 251  | 1290 |      | 464  | 1022 |      | 242  | 880  |      |
| HCM Platoon Ratio   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l)  | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh  | 21.5 | 26.9 | 0.0  | 23.6 | 32.4 | 0.0  | 28.6 | 42.3 | 0.0  | 33.8 | 38.5 | 0.0  |
| Incr Delay (d2), s/veh  | 7.4  | 2.7  | 0.0  | 3.8  | 3.0  | 0.0  | 1.1  | 10.4 | 0.0  | 6.7  | 0.3  | 0.0  |
| Initial Q Delay(d3),s/veh   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln  | 4.5  | 12.9 | 0.0  | 1.7  | 10.9 | 0.0  | 5.1  | 13.4 | 0.0  | 3.7  | 3.8  | 0.0  |
| Unsig. Movement Delay, s/veh  |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh  | 28.9 | 29.7 | 0.0  | 27.4 | 35.3 | 0.0  | 29.7 | 52.7 | 0.0  | 40.5 | 38.8 | 0.0  |
| LnGrp LOS   | C    | C    |      | C    | D    |      | C    | D    |      | D    | D    |      |
| Approach Vol, veh/h   |      | 1381 | A    |      | 969  | A    |      | 1096 | A    |      | 461  | A    |
| Approach Delay, s/veh   |      | 29.5 |      |      | 34.6 |      |      | 47.8 |      |      | 39.3 |      |
| Approach LOS  |      | C    |      |      | C    |      |      | D    |      |      | D    |      |
| Timer - Assigned Phs  | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s  | 14.2 | 36.8 | 11.0 | 58.1 | 18.3 | 32.7 | 21.0 | 48.1 |      |      |      |      |
| Change Period (Y+Rc), s   | 4.5  | 4.5  | 4.5  | 4.5  | 4.5  | 4.5  | 4.5  | 4.5  |      |      |      |      |
| Max Green Setting (Gmax), s   | 10.7 | 34.5 | 6.5  | 50.3 | 15.5 | 29.7 | 16.5 | 40.3 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s  | 9.7  | 30.0 | 5.6  | 32.9 | 13.7 | 10.7 | 11.6 | 27.2 |      |      |      |      |
| Green Ext Time (p_c), s   | 0.0  | 2.2  | 0.0  | 7.1  | 0.1  | 1.8  | 0.3  | 4.6  |      |      |      |      |
| <b>Intersection Summary</b>   |      |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay  |      |      | 37.1 |      |      |      |      |      |      |      |      |      |
| HCM 6th LOS   |      |      | D    |      |      |      |      |      |      |      |      |      |
| <b>Notes</b>  |      |      |      |      |      |      |      |      |      |      |      |      |
| Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay. |      |      |      |      |      |      |      |      |      |      |      |      |



**DEVIATION REQUEST** (Attach diagrams, figures, and other documentation to clarify request)

A deviation from the standards of or in Section **2.4.1. F. 2.** of the Engineering Criteria Manual (ECM) is requested.

Identify the specific ECM standard which a deviation is requested:

**2.4.1 F. Access Clearance from Intersections.**

**2. Commercial.** Access to commercial or industrial properties fronting collector or local roads shall be located a minimum of 50 feet from the point of curvature or point of tangency of the curb line at the intersection. Access to commercial or industrial parcels fronting Nonresidential Collector roadways shall be located a minimum of 115 - 480 feet from the point of curvature or point of tangency of the curb line at the intersection depending on the sight distance and location with respect to the intersection, intersection control, and posted speed.

In all cases, a minimum corner clearance of 50 feet shall be provided. If the minimum corner clearance cannot be attained, the ECM Administrator may require investigation to determine if left turns should be prohibited into or out of the access point. For proposed access points near stop or signalized intersections, the ECM Administrator will require studies to determine if stopping queues will block the access point and if left turns should be prohibited into or out of the access point.

State the reason for the requested deviation:

A deviation from the above is requested for the access located along Peterson Road. Peterson Road has a posted speed limit of 35 mph and therefore would require a minimum of 250' from adjacent intersections per Table 2-33 within Chapter 2 of the ECM. The access is being shown as a right-in/right-out (RIRO) located 200' from the signalized intersection of Peterson Road/Constitution Avenue to the north. Therefore, a deviation of 50' from the standard is being requested. The access is located nearest to the standard as can be geometrically provided.



Explain the proposed alternative and compare to the ECM standards (May provide applicable regional or national standards used as basis):

The proposed access would be located within 50' of the standard. The access is proposed to be RIRO to alleviate any concern that the deficient access spacing would cause.

**LIMITS OF CONSIDERATION**

(At least one of the conditions listed below must be met for this deviation request to be considered.)

- The ECM standard is inapplicable to the particular situation.
- Topography, right-of-way, or other geographical conditions or impediments impose an undue hardship and an equivalent alternative that can accomplish the same design objective is available and does not compromise public safety or accessibility.
- A change to a standard is required to address a specific design or construction problem, and if not modified, the standard will impose an undue hardship on the applicant with little or no material benefit to the public.

Provide justification:

A number of factors contribute to the justification of this request.

1. The access is proposed restricted to RIRO eliminating the majority of the conflict points related to this access.
2. The access is being located as far from the nearest intersection as possible considering the available frontage of the site and onsite constraints including location of the detention pond.
3. The proposed RIRO is located across from an existing access which will minimize perceived offset intersection conflicts although none exist due to the proposed access being restricted to RIRO.
4. No queueing at the nearby signal is anticipated to conflict with the proposed access as the northbound right lane operates as a free-flow with dedicated lane condition.

**CRITERIA FOR APPROVAL**

Per ECM section 5.8.7 the request for a deviation may be considered if the request is **not based exclusively on financial considerations**. The deviation must not be detrimental to public safety or surrounding property. The applicant must include supporting information demonstrating compliance with **all of the following criteria**:

The deviation will achieve the intended result with a comparable or superior design and quality of improvement.

The deviation will achieve the intended result with a comparable or superior design and quality of improvement. This is achieved by physically restricting the access movements to alleviate any safety concerns.

The deviation will not adversely affect safety or operations.

The deviation will not adversely affect safety or operations. Traffic memorandum suggests projected AM/PM peak hour trips to be 11/16 trips respectively. Site generated traffic will not adversely affect safety or operations. Development would not significantly impact surrounding roadways.

The deviation will not adversely affect maintenance and its associated cost.

The deviation will not adversely affect maintenance and its associated cost. The proposed alternative represent no impact to maintenance or cost from the standard.

The deviation will not adversely affect aesthetic appearance.

The deviation will not adversely affect aesthetic appearance. The proposed alternative represents no impact to the aesthetic appearance from the standard.

The deviation meets the design intent and purpose of the ECM standards.

The deviation meets the design intent and purpose of the ECM standards.

The deviation meets the control measure requirements of Part I.E.3 and Part I.E.4 of the County's MS4 permit, as applicable.

The deviation meets the control measure requirements of Part I.E.3 and Part I.E.4 of the County's MS4 permit, as applicable.

**REVIEW AND RECOMMENDATION:**

**Approved by the ECM Administrator**

This request has been determined to have met the criteria for approval. A deviation from Section \_\_\_\_\_ of the ECM is hereby granted based on the justification provided.

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**Denied by the ECM Administrator**

This request has been determined not to have met criteria for approval. A deviation from Section \_\_\_\_\_ of the ECM is hereby denied.

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**ECM ADMINISTRATOR COMMENTS/CONDITIONS:**

## **1.1. PURPOSE**

The purpose of this resource is to provide a form for documenting the findings and decision by the ECM Administrator concerning a deviation request. The form is used to document the review and decision concerning a requested deviation. The request and decision concerning each deviation from a specific section of the ECM shall be recorded on a separate form.

## **1.2. BACKGROUND**

A deviation is a critical aspect of the review process and needs to be documented to ensure that the deviations granted are applied to a specific development application in conformance with the criteria for approval and that the action is documented as such requests can point to potential needed revisions to the ECM.

## **1.3. APPLICABLE STATUTES AND REGULATIONS**

Section 5.8 of the ECM establishes a mechanism whereby an engineering design standard can be modified when if strictly adhered to, would cause unnecessary hardship or unsafe design because of topographical or other conditions particular to the site, and that a departure may be made without destroying the intent of such provision.

## **1.4. APPLICABILITY**

All provisions of the ECM are subject to deviation by the ECM Administrator provided that one of the following conditions is met:

- The ECM standard is inapplicable to a particular situation.
- Topography, right-of-way, or other geographical conditions or impediments impose an undue hardship on the applicant, and an equivalent alternative that can accomplish the same design objective is available and does not compromise public safety or accessibility.
- A change to a standard is required to address a specific design or construction problem, and if not modified, the standard will impose an undue hardship on the applicant with little or no material benefit to the public.

## **1.5. TECHNICAL GUIDANCE**

The review shall ensure all criteria for approval are adequately considered and that justification for the deviation is properly documented.

## **1.6. LIMITS OF APPROVAL**

Whether a request for deviation is approved as proposed or with conditions, the approval is for project-specific use and shall not constitute a precedent or general deviation from these Standards.

## **1.7. REVIEW FEES**

A Deviation Review Fee shall be paid in full at the time of submission of a request for deviation. The fee for Deviation Review shall be as determined by resolution of the BoCC.