



SPEED ZONE SURVEY

BLACKSTONE PARKWAY

(No. 2797)

From Valley View Parkway (private road) to Cornerstone Drive (No. 2799)

Reviewed by the Traffic Advisory Committee on OCT 01 2015

COMMITTEE APPROVED STAFF'S RECOMMENDATION.

COMMITTEE REQUESTED FURTHER ACTION.

Action: APPROVED

**TRANSPORTATION DIVISION
ENGINEERING AND TRAFFIC SURVEY**

Location: Blackstone Parkway (No. 2797) from Valley View Parkway (private road) to Cornerstone Drive (No. 2799)

Subject: Speed Zone Survey

Date: July 29, 2015

REQUEST REFERENCE:

This study was initiated in response to a petition from six residents living within the surrounding community of Blackstone Parkway and three board members of the Parking and Safety Committee of the Blackstone Homeowner's Association. The petition is requesting a 40 mph regulatory "Speed Zone" on Blackstone Parkway from Valley View Parkway and Cornerstone Drive in both directions of travel with radar enforcement.

The scope of this study is limited to determining if a regulatory speed limit is appropriate for the area based on distance, volumes and delineation of the roadway and what the speed limit would be appropriate for the roadway. The total length of the speed zone is 0.68 miles long. This study is limited to Blackstone Parkway from Valley View Parkway to Cornerstone Drive. All subsequent references apply only to this area unless otherwise indicated.

GENERAL PHYSICAL CONDITIONS:

<i>Functional Classification:</i>	<i>Local Road</i>
<i>Length:</i>	<i>0.68 miles total</i>
<i>Limits:</i>	<i>From Valley View Parkway to Cornerstone Drive</i>
<i>Alignment:</i>	<i>Straight sections interspersed with curves</i>
<i>Grade:</i>	<i>Moderate grades transitioning to level</i>
<i>Surface:</i>	<i>Asphalt surface</i>
<i>Striping:</i>	<i>Centerline and edge line from throughout survey section with the majority being separated by a concrete and landscaped median with a left turn pocket for the southbound lane at Cornerstone Drive</i>
<i>Shoulders:</i>	<i>East side has concrete curb and gutter and west side has concrete curb and gutter with sidewalks.</i>
<i>Speed Limit:</i>	<i>Not posted – Basic speed law applies with max of 55 MPH</i>

Blackstone Parkway is intersected by Valley View Parkway and Cornerstone Drive within the study area. Traffic entering from Valley View Parkway is not required to stop at the Valley View Parkway and Blackstone Parkways intersection as the road ends southeast of the intersection. Traffic entering

from Cornerstone Drive is required to stop at Blackstone Parkway. Cornerstone Parkway is controlled by a “STOP” sign, legend and limit line at its intersections with Blackstone Parkway.

No portion of the study section of Blackstone Parkway currently meets the minimum housing density requirements, or concentration of businesses necessary to qualify for a 25 mile per hour prime facie Residence District or Business District speed limit as defined in the *California Vehicle Code*.

Blackstone Parkway was accepted into the County Maintained Roadway System in 2010. Blackstone Parkway is a two (2) – lane divided asphalt concrete roadway, in good condition, with a left turn pocket at the intersection for the southbound lane at the Cornerstone Drive. The pavement is approximately 36 feet in width with six (6) foot wide Class II bike lanes with a sidewalk along the west side of Blackstone Parkway.

ADA Curb ramps are present at the northwest, northeast, and southeast corners of the intersection with Blackstone Parkway / Cornerstone Drive. Pavement markings consist of yellow centerline striping, and white edge line striping. A “STOP” legend, limit line, and centerline currently exist on Cornerstone Drive at the intersection.

Blackstone Parkway is classified as a local roadway by the Federal Highway Administration (FHWA), as depicted by the California Road System (CRS) maps; however, this roadway functions as collector roadway for the adjoining subdivisions and the southerly entrance at Clubview Drive.

RECORD DATA:

A review of the average daily traffic volume counts for Blackstone Parkway revealed that counts were conducted by the County of El Dorado Transportation Division on April 17, 2015. The following counts were recorded:

<i>DATE</i>	<i>MILEPOST</i>	<i>SITE</i>	<i>ADT</i>
<i>April 2015</i>	<i>0.55</i>	<i>700 feet n/o Cornerstone Drive</i>	<i>1,473</i>
<i>April 2015</i>	<i>0.66</i>	<i>100 feet s/o Cornerstone Drive</i>	<i>1,517</i>
<i>Average Daily Traffic Counts</i>			<i>1,495</i>

A review of the accident data provided by the California Highway Patrol for a three (3) year period from January 1, 2012, through December 31, 2014, disclosed no (0) reported accidents for Blackstone Parkway (see attached sheet).

The California Vehicle Code, Section 22358, allows local authorities to establish speed limits based on an “Engineering and Traffic Survey”. The Vehicle Code goes on, in Section 40801 to prohibit the use of “speed traps” for the purpose of speed enforcement and, in Section 40802, defines “speed trap”. Section 40802 also indicates that an “Engineering and Traffic Survey” is required where speed enforcement involves the use of radar and establishes the frequency with which surveys must be

conducted for continued radar enforcement. In order to comply with the provisions of the Vehicle Code, and insure that radar enforced speed zones are based on recent data, the County of El Dorado has established a practice of conducting engineering and traffic survey updates based on a cycle length of five (5) years or less.

In Section 627 the Vehicle Code provides a definition for “Engineering and Traffic Survey”, and states that an “Engineering and Traffic Survey” shall include:

1. Prevailing speeds as determined by traffic engineering measurements.
2. Accident records.
3. Highway, traffic, and roadside conditions not readily apparent to the driver.

In addition, the 2001 edition of the Vehicle Code added that residential density, pedestrian, and bicycle safety may be considered.

While the California Vehicle Code is silent regarding the relationship of the 85th percentile speed to the posted speed, the California Manual on Uniform Traffic Control Devices (CAMUTCD), Section 2B.13, “Speed Limit Sign”, “Engineering and Traffic Survey”, states in part:

“When a speed limit is to be posted, it shall be established at the nearest 5mph increment of the 85th percentile speed of free-flowing traffic, . . . [except] The posted speed may be reduced by 5 mph from the nearest 5 mph increment of the 85th percentile speed . . .”

Section 2B.13 further states in part:

“If the speed limit to be posted has had the 5 mph reduction applied, then an E&TS shall document in writing the conditions and justification for the lower speed limit and be approved by a registered Civil or Traffic Engineer. The reasons for the lower speed limit shall be in compliance with CVC Sections 627 and 22358.5.

Support:

An example of the application of this speed limit criterion is as follows:

- If the 85th percentile speed in a speed survey was 37 mph, then the speed limit would be posted at 35 mph or optionally reduced to 30 mph. However,
- If the 85th percentile speed in a speed survey was 38 mph, then the speed limit would be posted at 40 mph or optionally reduced to 35 mph.

For guidance, when considering an additional reduction in the speed limit, Section 2B.13 provides in part:

“Other factors that may be considered when establishing speed limits are the following:

- A. Road characteristics, shoulder condition, grade, alignment, and sight distance;
- B. The pace speed;
- C. Roadside development and environment;
- D. Parking practices and pedestrian activity; and
- E. Reported crash experience for at least a 12-month period.”

The following caution is also provided:

“The establishment of a speed limit of more than 5 mph below the 85th percentile speed should be done with great care as studies have shown that establishing a speed limit at less than the 85th percentile generally results in an increase in collision rates; in addition, this may make violators of a disproportionate number of the reasonable majority of drivers.”

If there is no posted speed limit present on a road, the speed is controlled by Section 22350 “Basic Speed Law” of the California Vehicle Code, which states:

“No person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property.”

Section 22352(a)(2)(A), of the California Vehicle Code establishes a prima facie 25 mile per hour speed limit on any highway within a “Residence District”.

In defining a “Residence District”, Section 515 of the California Vehicle Code states:

“A “Residence District” is that portion of a highway and the property contiguous thereto, other than a business district, (a) upon one side of which highway, within a distance of a quarter of a mile, the contiguous property fronting thereon is occupied by 13 or more separate dwelling houses or business structures, or (b) upon both sides of which highway, collectively, within a distance of a quarter of a mile, the contiguous property fronting thereon is occupied by 16 or more separate dwelling houses or business structures. A residence district may be longer than one-quarter of a mile if the above ratio of separate dwelling houses or business structures to the length of the highway exists.”

In defining a “Business District”, Section 235 of the California Vehicle Code states:

“A “business district” is that portion of a highway and the property contiguous thereto (a) upon one side of which highway, for a distance of 600 feet, 50 percent or more of the contiguous property fronting thereon is occupied by buildings in use for business, or (b) upon both sides of which highway, collectively, for a distance of 300 feet, 50 percent or more of the contiguous property fronting thereon is so occupied. A business district may be longer than the distances specified in this section if the above ratio of buildings in use for business to the length of the highway exists.”

For the type and location of the various signs present along Blackstone Parkway, please see attached “SIGN INVENTORY PRINTOUT” sheet.

FIELD REVIEW AND OBSERVATION:

Two (2) radar speed surveys were conducted by the County of El Dorado County, Community Development Agency Transportation Division Traffic Section on Blackstone Parkway April 29, 2015 and May 1, 2015 (see attached sheets). The following table reflects the results of those surveys:

<i>2015 SITE LOCATION</i>	<i>MILE POST</i>	<i>SPEED LIMIT</i>	<i>85% SPEED</i>	<i>10 MPH PACE</i>	<i>% IN PACE SPEED</i>
<i>1,000 feet south of Valley View Parkway</i>	<i>0.19</i>	<i>55 mph</i>	<i>46 mph</i>	<i>36-45 mph</i>	<i>71.9%</i>
<i>525 feet north of Cornerstone Drive</i>	<i>0.58</i>	<i>55 mph</i>	<i>45 mph</i>	<i>37-46 mph</i>	<i>72.8%</i>

During the course of the field review that consisted of approximately three (3) hours, seven (7) bicyclists and thirty-one (31) pedestrians were observed along Blackstone Parkway within the study section.

CONTACTS:

None

FINDINGS AND CONCLUSIONS:

The study section of Blackstone Parkway for this survey is 0.68 miles long and runs north/south with the northerly terminus at Valley View Parkway and the southerly end terminating 0.68 miles at Cornerstone Drive. Based on the study, Blackstone Parkway has been found to have the following:

- 85th percentile speeds of 45 and 46 miles per hour were recorded
- The calculated average daily traffic volume was 1495 vehicles per day
- Roadway is curvilinear with moderate grade changes
- There are no intersecting roadways within this section currently
- The accident rate is 0.00 Accidents per Million Vehicle Miles for the three (3) year period from January, 2012, through December, 2014
- Seven (7) bicyclists and thirty-one (31) pedestrians were observed on the roadway during the site review
- Blackstone Parkway is classified as a Local Road, which serves as a “collector” street for the subdivision
- Blackstone Parkway does not qualify as a “Residence District” or “Business District”.

85th Percentile Speeds:

Section 2B.13 of the *California Manual on Uniform Traffic Control Devices* (CAMUTCD) provides criteria for establishing speed limits. The CAMUTCD provides that: “Speed limits set at or near the 85th percentile speed provide law enforcement officers with a limit to cite drivers who will not conform to what the majority considers reasonable and prudent.”

In accordance with those provisions, a radar enforced speed limit of 45 miles per hour is indicated and may be established on Blackstone Parkway.

The CAMUTCD also provides that the speed limit may be reduced by an additional five (5) miles per hour if the “Engineering and Traffic Survey” document in writing, the conditions and justification for the lower speed limit and it is approved by a registered Civil or Traffic Engineer.

DISCUSSION

The existing 85th percentile speeds recorded in the 2015 study are 45 and 46 miles per hour, which would justify a speed zone of 45 miles per hour based on the nearest five (5) mile per hour increment. Due to the presence bicyclists and high number of pedestrians in the area, engineering judgment indicates the need for a further reduction of five (5) miles per hour to 40 miles per hour.

Based on the results of the speed surveys and the requirements of the *California Vehicle Code* for the establishment of radar enforced speed zones, the lowest speed limit that can be established on Blackstone Parkway for continued radar enforcement is 40 miles per hour.

It is therefore concluded that the lowest applicable radar enforced speed limit that can be recommended for Blackstone Parkway is 40 miles per hour.

RECOMMENDATION

Based on the findings of this investigation, it is recommended that:

1. The Traffic Advisory Committee approves the speed zone with a limit of 40 miles per hour on Blackstone Parkway from Valley View Parkway to Cornerstone Drive.
2. The County of El Dorado Board of Supervisors be requested to adopt a Resolution to sanction the speed zone on Blackstone Parkway, with the following recommended wording:

Whereas, the County of El Dorado Ordinance Code Section 10.08.020 authorizes the Board of Supervisors to establish speed restrictions; and

NOW, THEREFORE, BE IT RESOLVED that Resolution No. 247-81, which established speed restrictions pursuant to Section 10.08.020 of the County of El Dorado Ordinance Code, is amended as follows:

Add:

“(gf) Blackstone Parkway (No. 2797) forty (40) miles per hour from Valley View Parkway (private road) to Cornerstone Drive (No. 2799).”

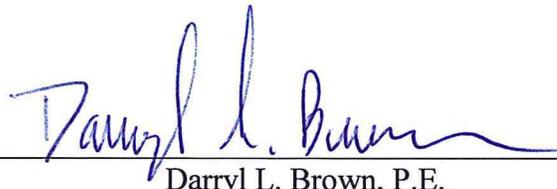
3. That following the adoption of the sanctioning Resolution by the County of El Dorado Board of Supervisors, R2-1 (40) (Forty Mile per Hour signs) and R48 (CA) (Radar Enforced) signs be installed on the south and northbound lanes of Blackstone Parkway between Valley View Parkway and Cornerstone Drive.
4. That the California Highway Patrol utilize radar enforcement on Blackstone Parkway from Valley View Parkway to Cornerstone Drive.

Prepared by: _____



Patricia Gaylord
Senior Engineering Technician

APPROVED BY: _____



Darryl L. Brown, P.E.
Traffic Superintendent

on _____

8/7/15
Date

APPROVED BY: _____



Bard R. Lower, Director
Transportation Division
Community Development Agency

on _____

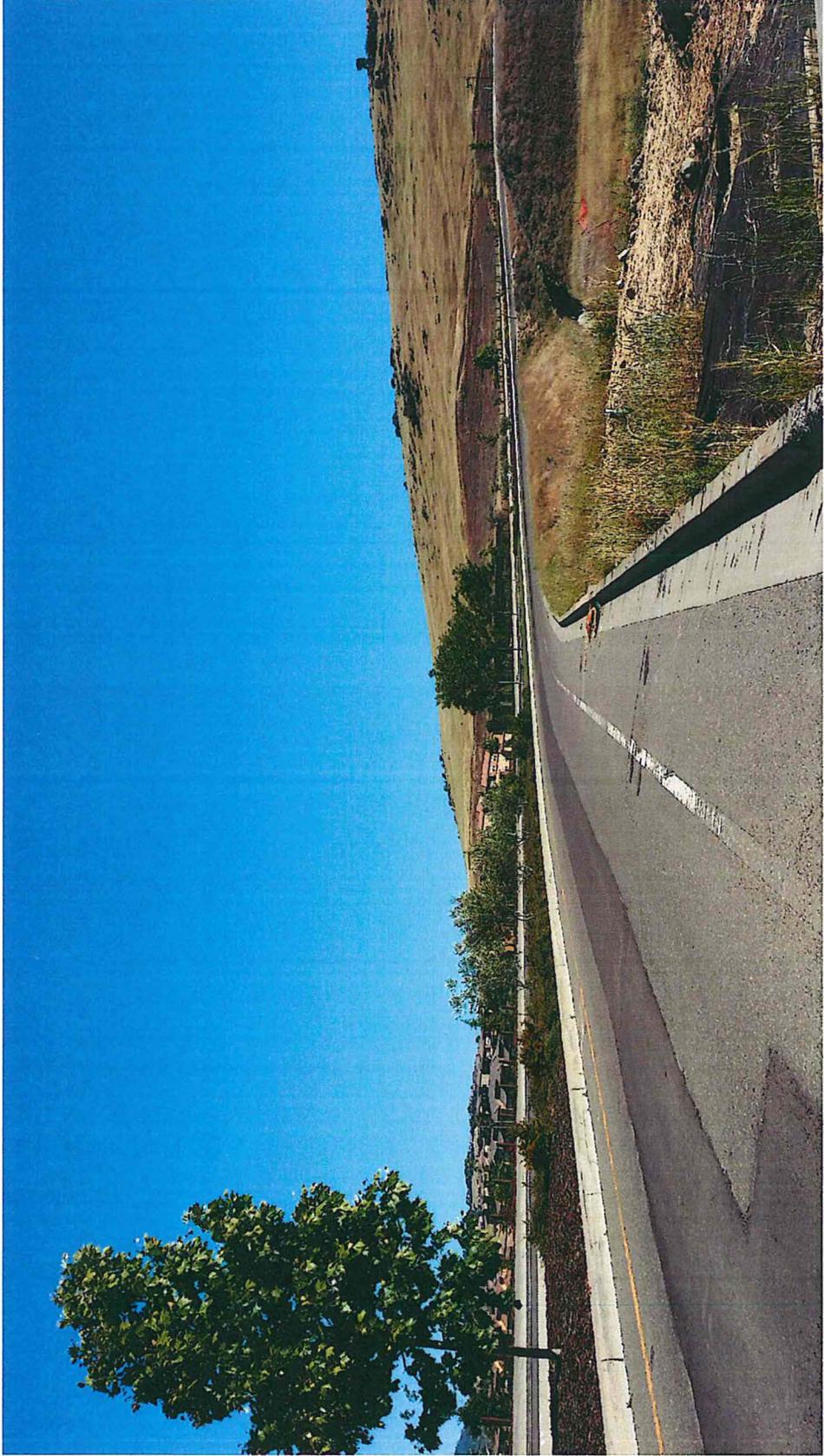
9/10/15
Date

Attachments: Vicinity Map (1)
Vicinity Photos (4)
Accident Summary (1)
Speed Surveys (2)

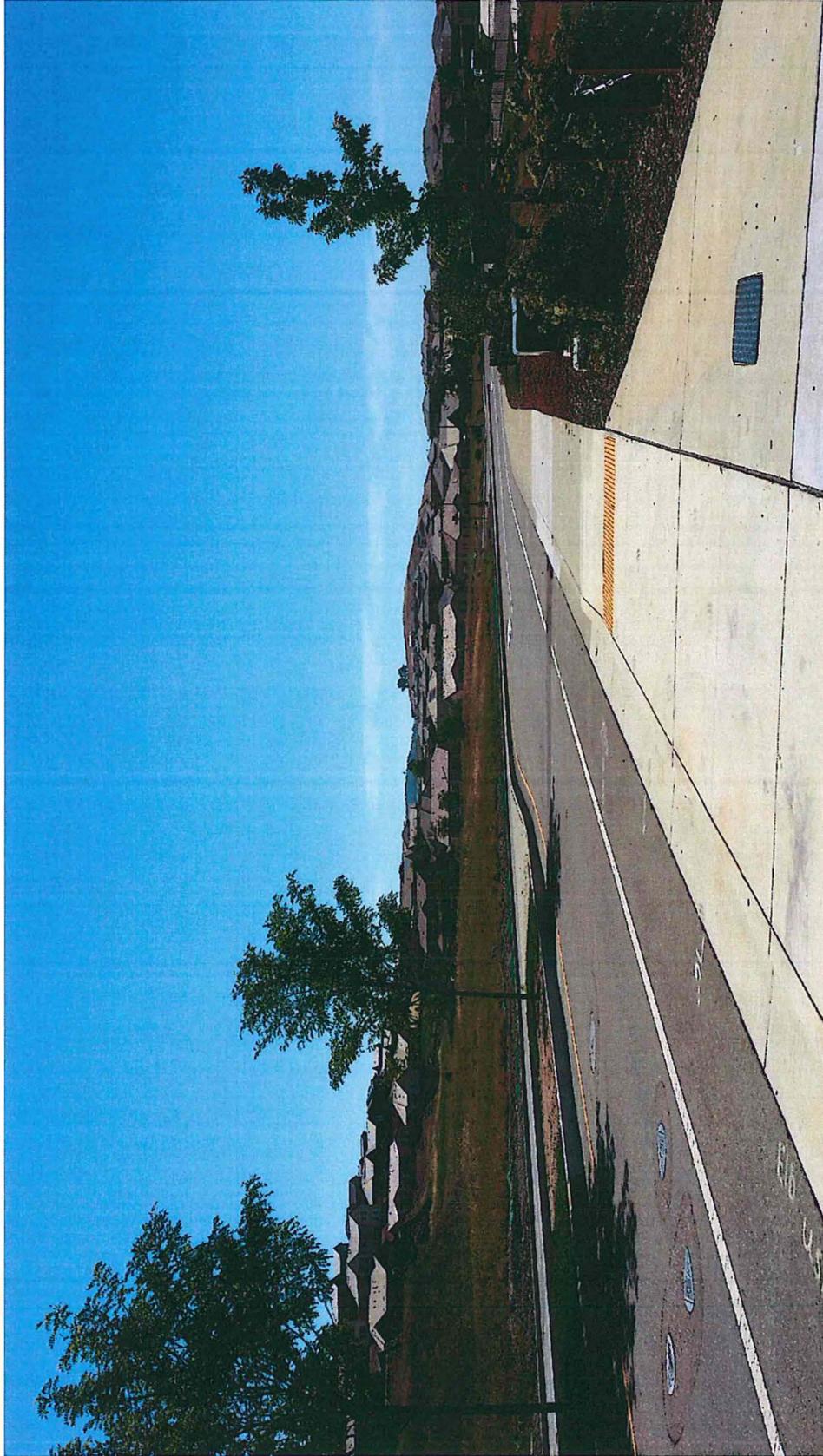
BLACKSTONE PARKWAY VICINITY MAP



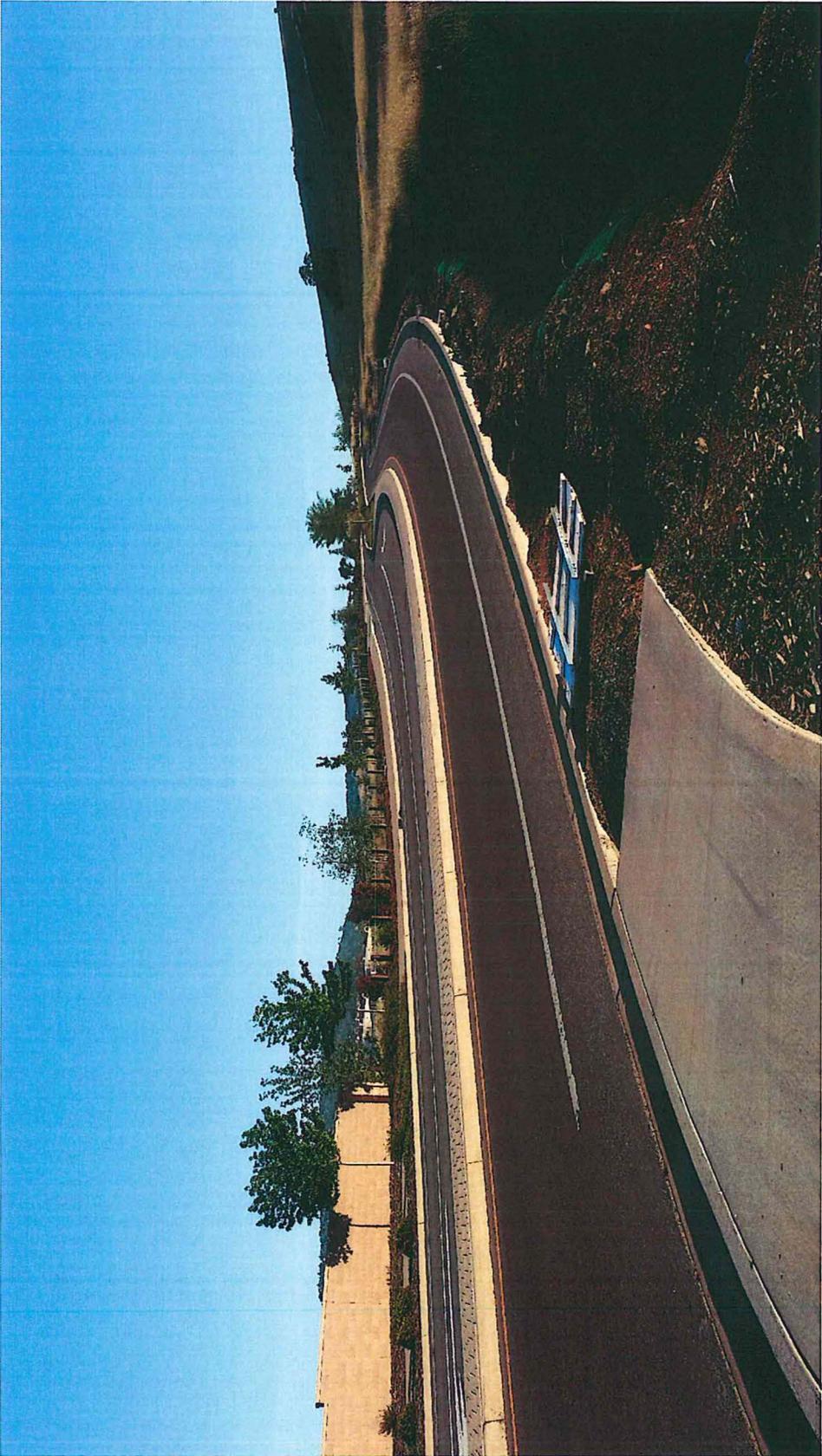
Blackstone Parkway Northbound south of Valley View Parkway



Blackstone Parkway Southbound north of Cornerstone Drive



Blackstone Parkway Northbound north of Cornerstone Drive



**EL DORADO COUNTY
COMMUNITY DEVELOPMENT AGENCY: TRANSPORTATION DIVISION**

Count Summary Beginning: April 17, 2015

Count Station:	Special	Counter ID:	71
City/Town:	El Dorado Hills	Mile Post:	
Road Name:	Blackstone Pkwy.	Location:	South of Cornerstone Dr.
Lanes:	2	Direction:	NORTHBOUND

Date	19	20	21	22	23	17	18	Weekly	Wk Day
Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Average	Avg.
Time									
100	0	1	1	0	2	1	2	1	1
200	1	0	0	1	1	0	1	1	0
300	2	0	2	0	0	0	2	1	0
400	2	0	0	1	1	1	1	1	1
500	0	1	1	0	1	2	0	1	1
600	1	5	7	4	4	2	2	4	4
700	4	36	30	13	18	22	8	19	24
800	9	51	48	50	60	50	13	40	52
900	16	36	38	36	42	35	27	33	37
1000	22	27	42	46	32	38	33	34	37
1100	32	28	34	34	35	38	23	32	34
1200	36	46	54	38	30	33	57	42	40
1300	40	46	44	54	57	36	41	45	47
1400	48	44	43	41	34	52	35	42	43
1500	45	36	38	42	28	48	32	38	38
1600	41	56	49	54	56	69	39	52	57
1700	28	68	91	70	82	75	55	67	77
1800	37	100	102	78	84	71	37	73	87
1900	26	55	56	65	64	64	39	53	61
2000	36	38	60	56	63	25	39	45	48
2100	11	23	22	21	22	29	18	21	23
2200	6	13	14	25	22	12	20	16	17
2300	6	4	4	4	9	6	5	5	5
2400	2	4	7	2	6	9	8	5	6
Totals	451	718	787	735	753	718	537	671	742
AM Peak Hr	12:00	8:00	12:00	8:00	8:00	8:00	12:00	12:00	8:00
AM Count	36	51	54	50	60	50	57	42	52
PM Peak Hr	2:00	6:00	6:00	6:00	6:00	5:00	5:00	6:00	6:00
PM Count	48	100	102	78	84	75	55	73	87

TOTAL ADT: 1,517

**EL DORADO COUNTY
COMMUNITY DEVELOPMENT AGENCY: TRANSPORTATION DIVISION**

Count Summary Beginning: April 17, 2015

Count Station:	Special	Counter ID:	71
City/Town:	El Dorado Hills	Mile Post:	
Road Name:	Blackstone Pkwy.	Location:	South of Cornerstone Dr.
Lanes:	2	Direction:	SOUTHBOUND

Date	19	20	21	22	23	17	18	Weekly	Wk Day
Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Average	Avg.
Time									
100	6	2	0	4	0	1	4	2	1
200	4	0	1	1	1	0	1	1	1
300	0	2	3	1	0	3	1	1	2
400	4	4	2	4	3	1	3	3	3
500	0	2	1	0	0	1	1	1	1
600	3	4	7	6	9	5	3	5	6
700	3	22	22	18	20	19	8	16	20
800	9	54	40	44	46	50	6	36	47
900	18	58	61	66	70	68	40	54	65
1000	30	46	50	52	31	34	27	39	43
1100	31	33	42	32	39	34	40	36	36
1200	39	51	51	38	45	30	40	42	43
1300	41	46	54	53	66	53	40	50	54
1400	59	50	52	60	46	46	42	51	51
1500	32	37	46	44	41	52	41	42	44
1600	35	72	82	71	72	64	37	62	72
1700	33	62	75	70	80	82	46	64	74
1800	32	74	71	76	82	65	32	62	74
1900	27	44	37	66	51	44	20	41	48
2000	40	36	46	40	45	40	38	41	41
2100	17	27	20	18	17	30	25	22	22
2200	6	17	12	15	18	24	24	17	17
2300	6	4	4	6	10	11	11	7	7
2400	4	1	2	1	5	4	8	4	3
Totals	479	748	781	786	797	761	538	699	775
AM Peak Hr	12:00	9:00	9:00	9:00	9:00	9:00	9:00	9:00	9:00
AM Count	39	58	61	66	70	68	40	54	65
PM Peak Hr	2:00	6:00	4:00	6:00	6:00	5:00	5:00	5:00	5:00
PM Count	59	74	82	76	82	82	46	64	74

TOTAL ADT: 1,517

**EL DORADO COUNTY
COMMUNITY DEVELOPMENT AGENCY: TRANSPORTATION DIVISION**

Count Summary Beginning: April 17, 2015

Count Station:	Special	Counter ID:	58
City/Town:	El Dorado Hills	Mile Post:	
Road Name:	Blackstone Pkwy.	Location:	North of Cornerstone Dr.
Lanes:	2	Direction:	NORTHBOUND

Date	19	20	21	22	23	17	18	Weekly	Wk Day
Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Average	Avg.
Time									
100	2	1	1	0	2	1	2	1	1
200	1	0	0	1	0	0	2	1	0
300	3	0	2	0	0	0	0	1	0
400	1	0	0	1	1	0	1	1	0
500	0	1	2	0	1	2	0	1	1
600	0	10	6	6	6	4	1	5	6
700	7	25	22	18	23	19	6	17	21
800	7	49	54	51	50	47	9	38	50
900	22	35	38	48	47	40	32	37	42
1000	30	34	37	50	34	40	37	37	39
1100	32	32	30	36	28	40	33	33	33
1200	32	35	47	38	37	39	54	40	39
1300	47	54	48	53	45	32	51	47	46
1400	51	38	46	39	38	47	46	44	42
1500	36	26	34	35	36	46	36	36	35
1600	45	70	61	61	57	64	38	57	63
1700	30	70	77	69	78	69	70	66	73
1800	32	87	96	77	84	71	36	69	83
1900	28	53	58	58	59	61	41	51	58
2000	29	38	51	44	61	30	33	41	45
2100	13	19	21	23	18	23	13	19	21
2200	6	9	11	19	15	12	15	12	13
2300	3	4	2	4	8	6	2	4	5
2400	0	1	2	0	2	8	4	2	3
Totals	457	691	746	731	730	701	562	660	720
AM Peak Hr	11:00	8:00	8:00	8:00	8:00	8:00	12:00	12:00	8:00
AM Count	32	49	54	51	50	47	54	40	50
PM Peak Hr	2:00	6:00	6:00	6:00	6:00	6:00	5:00	6:00	6:00
PM Count	51	87	96	77	84	71	70	69	83

TOTAL ADT: 1,473

**EL DORADO COUNTY
COMMUNITY DEVELOPMENT AGENCY: TRANSPORTATION DIVISION**

Count Summary Beginning: April 17, 2015

Count Station:	Special	Counter ID:	58
City/Town:	El Dorado Hills	Mile Post:	
Road Name:	Blackstone Pkwy.	Location:	North of Cornerstone Dr.
Lanes:	2	Direction:	SOUTHBOUND

Date	19	20	21	22	23	17	18	Weekly	Wk Day
Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Average	Avg.
Time									
100	7	0	0	5	1	2	5	3	2
200	3	0	1	0	1	0	1	1	0
300	0	1	1	0	0	3	1	1	1
400	2	1	0	2	1	0	2	1	1
500	0	0	1	0	0	0	0	0	0
600	2	5	2	3	4	2	1	3	3
700	1	17	20	16	18	14	9	14	17
800	8	39	30	36	39	44	6	29	38
900	13	51	47	59	52	58	30	44	53
1000	21	35	48	44	29	36	19	33	38
1100	30	28	39	37	37	26	43	34	33
1200	41	46	46	41	37	36	43	41	41
1300	42	42	52	48	57	48	42	47	49
1400	63	49	53	55	54	47	43	52	52
1500	35	41	40	37	40	51	42	41	42
1600	36	60	74	70	63	67	48	60	67
1700	43	70	84	63	84	85	45	68	77
1800	34	74	71	83	88	64	40	65	76
1900	28	49	46	67	55	50	24	46	53
2000	46	47	52	55	54	45	40	48	51
2100	20	35	27	18	21	37	25	26	28
2200	12	16	15	14	24	28	28	20	19
2300	5	6	7	7	9	10	13	8	8
2400	2	4	2	2	4	4	8	4	3
Totals	494	716	758	762	772	757	558	688	753
AM Peak Hr	12:00	9:00	10:00	9:00	9:00	9:00	11:00	9:00	9:00
AM Count	41	51	48	59	52	58	43	44	53
PM Peak Hr	2:00	6:00	5:00	6:00	6:00	5:00	4:00	5:00	5:00
PM Count	63	74	84	83	88	85	48	68	77

TOTAL ADT: 1,473

**EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
ACCIDENT SITE ANALYSIS SUMMARY FOR**

Blackstone Pkwy
For Use with Speed Survey 2015

Report Date: 5/4/2015

For the period beginning January 1, 2012 and ending December 31, 2014

Beginning at Mile Post 0.00		and Ending at Mile Post 0.68		Roadway Section Length = 0.68		
2012	Number of Accidents:	0	Number of Injuries:	0	Number of Fatalities:	0
2013	Number of Accidents:	0	Number of Injuries:	0	Number of Fatalities:	0
2014	Number of Accidents:	0	Number of Injuries:	0	Number of Fatalities:	0
Accident Total = 0		Injury Total = 0		Fatality Total = 0		

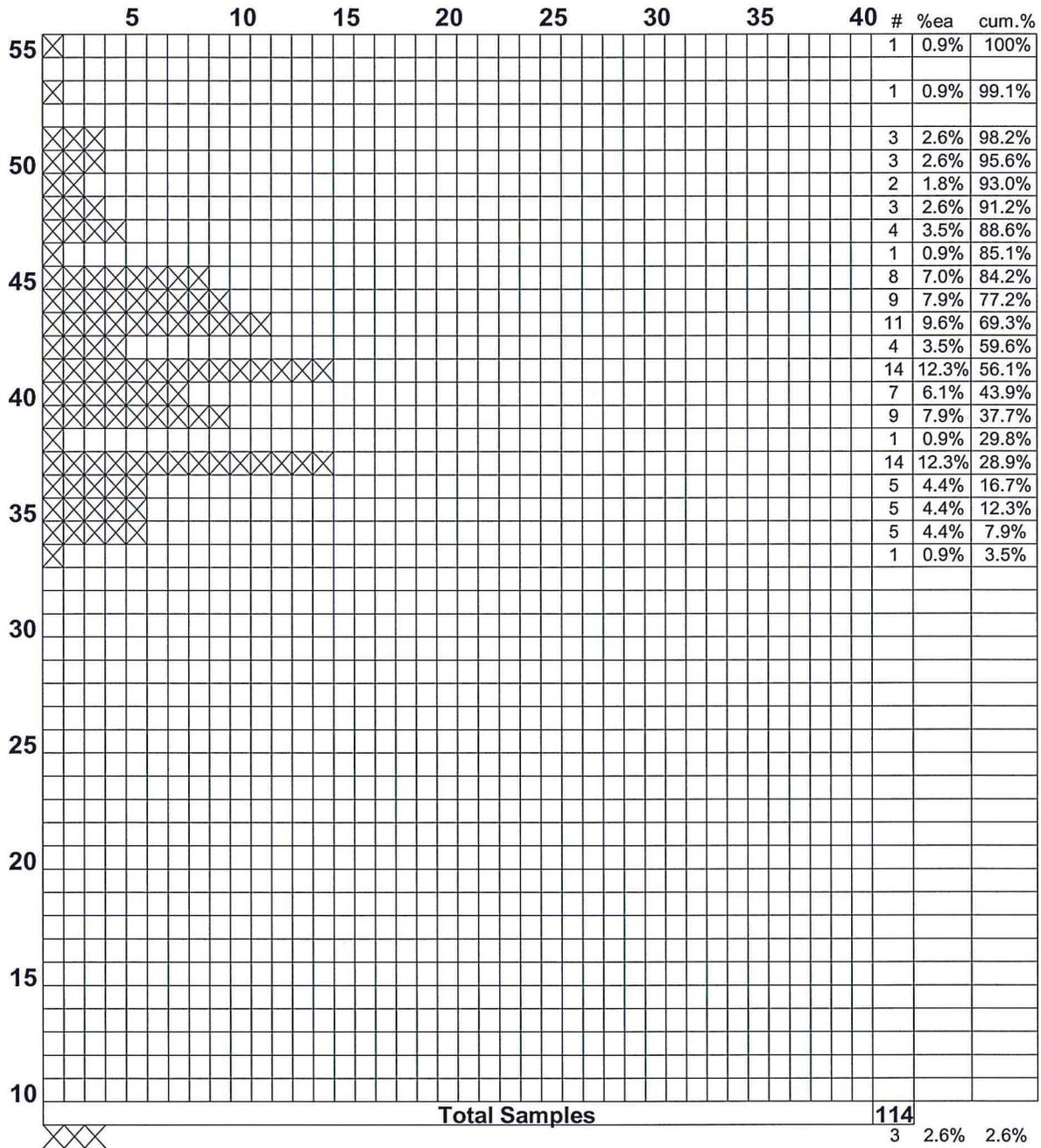
**County of El Dorado
Transportation Division**

Street Name: BLACKSTONE PARKWAY

Limits: VALLEY VIEW PARKWAY to CORNERSTONE DRIVE

Radar Survey Sheet

X=North/South



85th Percentile Speed: 46
 50th Percentile Speed: 41
 15th Percentile Speed: 36
 10 MPH Pace: 36- 45
 Number in Pace: 82
 Percent in Pace: 71.9%

Date of Survey: 5/1/2015
 Weather: Sunny
 Road Condition: DRY
 Street Class.: Local
 Observer: P GAYLORD
 Conditions not Apparent:

Start Time: 7:15
 End Time: 8:36
 Posted Speed: 55