

**TRACY HILLS SPECIFIC PLAN  
RECIRCULATED  
DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT  
VOLUME III  
OCTOBER 2015**

**APPENDIX H-4**

HIGHWAY RAMP MERGE/DIVERGE ANALYSIS (HCS), DATED FALL  
2014



RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 EB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		AM Peak			Analysis Year		Existing		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			178		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			41				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	178	0.92	Level	18	0	0.917	1.00	211	
Ramp	41	0.70	Level	11	0	0.948	1.00	62	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 211 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	273	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	273	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 6.0 (pc/mi/ln) LOS = A (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.299 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.6 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.6 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Existing				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			178		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			58				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	178	0.92	Level	18	0	0.917	1.00	211	
Ramp	58	0.69	Level	19	0	0.913	1.00	92	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 211 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	211	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	119	Exhibit 13-8	4800	No
					V <sub>R</sub>	92	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	211	Exhibit 13-8		4400:All
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 4.3 (pc/mi/ln) LOS = A (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.436 (Exhibit 13-12) S <sub>R</sub> = 57.8 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.8 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 WB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		AM Peak			Analysis Year		Existing		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1689		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			325				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1689	0.92	Level	18	0	0.917	1.00	2001	
Ramp	325	0.72	Level	13	0	0.939	1.00	481	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 2001 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2482	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2482	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 22.1 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.324 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	60.9 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	60.9 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Existing				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1886		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			197				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1886	0.92	Level	18	0	0.917	1.00	2235	
Ramp	197	0.77	Level	14	0	0.935	1.00	274	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 2235 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2235	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1961	Exhibit 13-8	4800	No
					V <sub>R</sub>	274	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2235	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 21.7 (pc/mi/ln) LOS = C (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.453 (Exhibit 13-12) S <sub>R</sub> = 57.3 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.3 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 EB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		PM Peak			Analysis Year		Existing		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1433		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			333				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1433	0.92	Level	18	0	0.917	1.00	1698	
Ramp	333	0.86	Level	6	0	0.971	1.00	399	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1698 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2097	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2097	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 20.1 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.325 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	60.9 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	60.9 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Existing				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1433		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			263				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1433	0.92	Level	18	0	0.917	1.00	1698	
Ramp	263	0.91	Level	8	0	0.962	1.00	301	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 1698 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	1698	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1397	Exhibit 13-8	4800	No
					V <sub>R</sub>	301	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	1698	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 17.1 (pc/mi/ln) LOS = B (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.455 (Exhibit 13-12) S <sub>R</sub> = 57.3 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.3 mph (Exhibit 13-13)				



RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 WB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		PM Peak			Analysis Year		Existing		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			967		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			86				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	967	0.92	Level	18	0	0.917	1.00	1146	
Ramp	86	0.83	Level	5	0	0.976	1.00	106	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1146 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	1252	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	1252	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 12.7 (pc/mi/ln) LOS = B (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.291 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.9 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.9 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Existing				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1019		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			52				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1019	0.92	Level	18	0	0.917	1.00	1207	
Ramp	52	0.93	Level	4	0	0.980	1.00	57	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 1207 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	1207	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1150	Exhibit 13-8	4800	No
					V <sub>R</sub>	57	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	1207	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 12.8 (pc/mi/ln) LOS = B (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.433 (Exhibit 13-12) S <sub>R</sub> = 57.9 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.9 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 EB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		AM Peak			Analysis Year		Existing Plus Project		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			178		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			221				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	178	0.92	Level	18	0	0.917	1.00	211	
Ramp	221	0.70	Level	11	0	0.948	1.00	333	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 211 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	544	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	544	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 8.0 (pc/mi/ln) LOS = A (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.300 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.6 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.6 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Existing Plus Project				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			420		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			242				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	420	0.92	Level	18	0	0.917	1.00	498	
Ramp	242	0.69	Level	19	0	0.913	1.00	384	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 498 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	498	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	114	Exhibit 13-8	4800	No
					V <sub>R</sub>	384	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	498	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 6.7 (pc/mi/ln) LOS = A (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.463 (Exhibit 13-12) S <sub>R</sub> = 57.0 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.0 mph (Exhibit 13-13)				

<b>RAMPS AND RAMP JUNCTIONS WORKSHEET</b>									
<b>General Information</b>					<b>Site Information</b>				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 WB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		AM Peak			Analysis Year		Existing Plus Project		
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1689		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			1171				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1689	0.92	Level	18	0	0.917	1.00	2001	
Ramp	1171	0.72	Level	13	0	0.939	1.00	1732	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 2001 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	3733	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	3733	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 31.3 (pc/mi/ln) LOS = D (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = 0.440 (Exhibit 13-11) S <sub>R</sub> = 57.7 mph (Exhibit 13-11) S <sub>0</sub> = N/A mph (Exhibit 13-11) S = 57.7 mph (Exhibit 13-13)					D <sub>s</sub> = (Exhibit 13-12) S <sub>R</sub> = mph (Exhibit 13-12) S <sub>0</sub> = mph (Exhibit 13-12) S = mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Existing Plus Project				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1960		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			271				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1960	0.92	Level	18	0	0.917	1.00	2322	
Ramp	271	0.77	Level	14	0	0.935	1.00	377	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 2322 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2322	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1945	Exhibit 13-8	4800	No
					V <sub>R</sub>	377	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2322	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 22.4 (pc/mi/ln) LOS = C (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.462 (Exhibit 13-12) S <sub>R</sub> = 57.1 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.1 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 EB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		PM Peak			Analysis Year		Existing Plus Project		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1433		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			449				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1433	0.92	Level	18	0	0.917	1.00	1698	
Ramp	449	0.86	Level	6	0	0.971	1.00	538	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1698 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2236	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2236	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 21.1 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.330 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	60.8 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	60.8 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Existing Plus Project				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			2455		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			1022				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	2455	0.92	Level	18	0	0.917	1.00	2909	
Ramp	1022	0.91	Level	8	0	0.962	1.00	1168	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 2909 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2909	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1741	Exhibit 13-8	4800	No
					V <sub>R</sub>	1168	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2909	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 27.5 (pc/mi/ln) LOS = C (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.533 (Exhibit 13-12) S <sub>R</sub> = 55.1 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 55.1 mph (Exhibit 13-13)				



RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 WB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		PM Peak			Analysis Year		Existing Plus Project		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			967		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			326				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	967	0.92	Level	18	0	0.917	1.00	1146	
Ramp	326	0.83	Level	5	0	0.976	1.00	403	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1146 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	1549	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	1549	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 14.9 (pc/mi/ln) LOS = B (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> = 0.295 (Exhibit 13-11) S <sub>R</sub> = 61.7 mph (Exhibit 13-11) S <sub>0</sub> = N/A mph (Exhibit 13-11) S = 61.7 mph (Exhibit 13-13)					D <sub>S</sub> = (Exhibit 13-12) S <sub>R</sub> = mph (Exhibit 13-12) S <sub>0</sub> = mph (Exhibit 13-12) S = mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Existing Plus Project				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1178		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			211				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1178	0.92	Level	18	0	0.917	1.00	1396	
Ramp	211	0.93	Level	4	0	0.980	1.00	231	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 1396 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	1396	Exhibit 13-8	4800	No
			V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		1165	Exhibit 13-8	4800	No	
			V <sub>R</sub>		231	Exhibit 13-10	2000	No	
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	1396	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 14.5 (pc/mi/ln) LOS = B (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.449 (Exhibit 13-12) S <sub>R</sub> = 57.4 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.4 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580/Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Existing+Project Mitigated				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1689		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			425				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1689	0.92	Level	18	0	0.917	1.00	2001	
Ramp	425	0.72	Level	13	0	0.939	1.00	629	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 2001 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2630	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2630	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 23.2 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.331 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	60.7 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	60.7 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580/Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Existing+Project Mitigated				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			967		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			223				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	967	0.92	Level	18	0	0.917	1.00	1146	
Ramp	223	0.83	Level	5	0	0.976	1.00	275	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1146 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	1421	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	1421	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 13.9 (pc/mi/ln) LOS = B (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.293 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.8 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.8 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580/Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Existing Plus Buildout				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			178		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			279				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	178	0.92	Level	18	0	0.917	1.00	211	
Ramp	279	0.70	Level	11	0	0.948	1.00	420	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 211 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	631	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	631	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 8.6 (pc/mi/ln) LOS = A (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.301 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.6 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.6 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Existing Plus Buildout				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			540		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			362				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	540	0.92	Level	18	0	0.917	1.00	640	
Ramp	362	0.69	Level	19	0	0.913	1.00	574	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 640 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	640	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	66	Exhibit 13-8	4800	No
					V <sub>R</sub>	574	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	640	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 8.0 (pc/mi/ln) LOS = A (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11)					D <sub>S</sub> = 0.480 (Exhibit 13-12)				
S <sub>R</sub> = mph (Exhibit 13-11)					S <sub>R</sub> = 56.6 mph (Exhibit 13-12)				
S <sub>0</sub> = mph (Exhibit 13-11)					S <sub>0</sub> = N/A mph (Exhibit 13-12)				
S = mph (Exhibit 13-13)					S = 56.6 mph (Exhibit 13-13)				

<b>RAMPS AND RAMP JUNCTIONS WORKSHEET</b>									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580/Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Existing Plus Buildout				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1689		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			1404				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1689	0.92	Level	18	0	0.917	1.00	2001	
Ramp	1404	0.72	Level	13	0	0.939	1.00	2077	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 2001 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	4078	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	4078	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 33.8 (pc/mi/ln) LOS = D (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = 0.507 (Exhibit 13-11) S <sub>R</sub> = 55.8 mph (Exhibit 13-11) S <sub>0</sub> = N/A mph (Exhibit 13-11) S = 55.8 mph (Exhibit 13-13)					D <sub>S</sub> = (Exhibit 13-12) S <sub>R</sub> = mph (Exhibit 13-12) S <sub>0</sub> = mph (Exhibit 13-12) S = mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Existing Plus Buildout				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			2024		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			335				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	2024	0.92	Level	18	0	0.917	1.00	2398	
Ramp	335	0.77	Level	14	0	0.935	1.00	466	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 2398 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2398	Exhibit 13-8	4800	No
			V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		1932	Exhibit 13-8	4800	No	
			V <sub>R</sub>		466	Exhibit 13-10	2000	No	
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2398	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 23.1 (pc/mi/ln) LOS = C (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.470 (Exhibit 13-12) S <sub>R</sub> = 56.8 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 56.8 mph (Exhibit 13-13)				



RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 EB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		PM Peak			Analysis Year		Existing Plus Buildout		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1433		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			699				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1433	0.92	Level	18	0	0.917	1.00	1698	
Ramp	699	0.86	Level	6	0	0.971	1.00	837	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1698 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2535	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2535	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 23.3 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> = 0.343 (Exhibit 13-11) S <sub>R</sub> = 60.4 mph (Exhibit 13-11) S <sub>0</sub> = N/A mph (Exhibit 13-11) S = 60.4 mph (Exhibit 13-13)					D <sub>S</sub> = (Exhibit 13-12) S <sub>R</sub> = mph (Exhibit 13-12) S <sub>0</sub> = mph (Exhibit 13-12) S = mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Existing Plus Buildout				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			2525		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			1092				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	2525	0.92	Level	18	0	0.917	1.00	2992	
Ramp	1092	0.91	Level	8	0	0.962	1.00	1248	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13)				
L <sub>EQ</sub> =					L <sub>EQ</sub> =				
P <sub>FM</sub> =					P <sub>FD</sub> =				
V <sub>12</sub> =					V <sub>12</sub> =				
V <sub>3</sub> or V <sub>av34</sub>					V <sub>3</sub> or V <sub>av34</sub>				
Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If Yes, V <sub>12a</sub> =					If Yes, V <sub>12a</sub> =				
pc/h (Equation 13-16, 13-18, or 13-19)					pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2992	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1744	Exhibit 13-8	4800	No
					V <sub>R</sub>	1248	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2992	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
D <sub>R</sub> = 5.475 + 0.00734 v <sub>R</sub> + 0.0078 V <sub>12</sub> - 0.00627 L <sub>A</sub>					D <sub>R</sub> = 4.252 + 0.0086 V <sub>12</sub> - 0.009 L <sub>D</sub>				
D <sub>R</sub> = (pc/mi/ln)					D <sub>R</sub> = 28.2 (pc/mi/ln)				
LOS = (Exhibit 13-2)					LOS = D (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11)					D <sub>S</sub> = 0.540 (Exhibit 13-12)				
S <sub>R</sub> = mph (Exhibit 13-11)					S <sub>R</sub> = 54.9 mph (Exhibit 13-12)				
S <sub>0</sub> = mph (Exhibit 13-11)					S <sub>0</sub> = N/A mph (Exhibit 13-12)				
S = mph (Exhibit 13-13)					S = 54.9 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 WB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		PM Peak			Analysis Year		Existing Plus Buildout		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			967		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			686				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	967	0.92	Level	18	0	0.917	1.00	1146	
Ramp	686	0.83	Level	5	0	0.976	1.00	847	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1146 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	1993	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	1993	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 18.1 (pc/mi/ln) LOS = B (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> = 0.306 (Exhibit 13-11) S <sub>R</sub> = 61.4 mph (Exhibit 13-11) S <sub>0</sub> = N/A mph (Exhibit 13-11) S = 61.4 mph (Exhibit 13-13)					D <sub>S</sub> = (Exhibit 13-12) S <sub>R</sub> = mph (Exhibit 13-12) S <sub>0</sub> = mph (Exhibit 13-12) S = mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Existing Plus Buildout				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1248		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			281				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1248	0.92	Level	18	0	0.917	1.00	1479	
Ramp	281	0.93	Level	4	0	0.980	1.00	308	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 1479 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	1479	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1171	Exhibit 13-8	4800	No
					V <sub>R</sub>	308	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	1479	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 15.2 (pc/mi/ln) LOS = B (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.456 (Exhibit 13-12) S <sub>R</sub> = 57.2 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.2 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Existing+Buildout Mitigated				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			2		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			540		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			362				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	540	0.92	Level	18	0	0.917	1.00	640	
Ramp	362	0.69	Level	19	0	0.913	1.00	574	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 640 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	640	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	66	Exhibit 13-8	4800	No
					V <sub>R</sub>	574	Exhibit 13-10	4000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	640	Exhibit 13-8		4400:All
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 1.7 (pc/mi/ln) LOS = A (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11)					D <sub>S</sub> = 0.480 (Exhibit 13-12)				
S <sub>R</sub> = mph (Exhibit 13-11)					S <sub>R</sub> = 56.6 mph (Exhibit 13-12)				
S <sub>0</sub> = mph (Exhibit 13-11)					S <sub>0</sub> = N/A mph (Exhibit 13-12)				
S = mph (Exhibit 13-13)					S = 56.6 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Existing+Buildout Mitigated				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			2		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1092		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			2525				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1092	0.92	Level	18	0	0.917	1.00	1294	
Ramp	2525	0.91	Level	8	0	0.962	1.00	2886	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 1294 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	1294	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	-1592	Exhibit 13-8	4800	No
					V <sub>R</sub>	2886	Exhibit 13-10	4000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	1294	Exhibit 13-8		4400:All
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 7.3 (pc/mi/ln) LOS = A (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.688 (Exhibit 13-12) S <sub>R</sub> = 50.7 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 50.7 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 WB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		AM Peak			Analysis Year		Existing+Buildout Mitigated		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1689		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			648				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1689	0.92	Level	18	0	0.917	1.00	2001	
Ramp	648	0.72	Level	13	0	0.939	1.00	958	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 2001 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2959	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2959	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 25.6 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> = 0.352 (Exhibit 13-11) S <sub>R</sub> = 60.1 mph (Exhibit 13-11) S <sub>0</sub> = N/A mph (Exhibit 13-11) S = 60.1 mph (Exhibit 13-13)					D <sub>S</sub> = (Exhibit 13-12) S <sub>R</sub> = mph (Exhibit 13-12) S <sub>0</sub> = mph (Exhibit 13-12) S = mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580/Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Existing+Buildout Mitigated				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			967		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			543				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	967	0.92	Level	18	0	0.917	1.00	1146	
Ramp	543	0.83	Level	5	0	0.976	1.00	671	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1146 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	1817	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	1817	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 16.8 (pc/mi/ln) LOS = B (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.301 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.6 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.6 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			



RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 EB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		AM Peak			Analysis Year		Cumulative		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			38		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			109				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	38	0.92	Level	18	0	0.917	1.00	45	
Ramp	109	0.70	Level	11	0	0.948	1.00	164	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 45 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	209	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	209	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 5.5 (pc/mi/ln) LOS = A (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.298 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.6 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.6 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580/Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			174		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			41				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	174	0.92	Level	18	0	0.917	1.00	206	
Ramp	41	0.70	Level	11	0	0.948	1.00	62	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 206 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	268	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	268	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 6.0 (pc/mi/ln) LOS = A (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.299 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.6 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.6 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			215		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			177				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	215	0.92	Level	18	0	0.917	1.00	255	
Ramp	177	0.69	Level	19	0	0.913	1.00	281	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 255 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	255	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	-26	Exhibit 13-8	4800	No
					V <sub>R</sub>	281	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	255	Exhibit 13-8		4400:All
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 4.6 (pc/mi/ln) LOS = A (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.453 (Exhibit 13-12) S <sub>R</sub> = 57.3 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.3 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			236		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			62				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	236	0.92	Level	18	0	0.917	1.00	280	
Ramp	62	0.69	Level	19	0	0.913	1.00	98	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 280 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	280	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	182	Exhibit 13-8	4800	No
					V <sub>R</sub>	98	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	280	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 4.9 (pc/mi/ln) LOS = A (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.437 (Exhibit 13-12) S <sub>R</sub> = 57.8 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.8 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580/Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1073		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			622				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1073	0.92	Level	18	0	0.917	1.00	1271	
Ramp	622	0.72	Level	13	0	0.939	1.00	920	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1271 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2191	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2191	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 19.6 (pc/mi/ln) LOS = B (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.312 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.3 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.3 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 WB		
Agency or Company					Junction		I-580/Lammers Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		AM Peak			Analysis Year		Cumulative		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1583		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			112				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1583	0.92	Level	18	0	0.917	1.00	1876	
Ramp	112	0.72	Level	13	0	0.939	1.00	166	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1876 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2042	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2042	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 18.8 (pc/mi/ln) LOS = B (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> = 0.307 (Exhibit 13-11) S <sub>R</sub> = 61.4 mph (Exhibit 13-11) S <sub>0</sub> = N/A mph (Exhibit 13-11) S = 61.4 mph (Exhibit 13-13)					D <sub>S</sub> = (Exhibit 13-12) S <sub>R</sub> = mph (Exhibit 13-12) S <sub>0</sub> = mph (Exhibit 13-12) S = mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1545		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			472				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1545	0.92	Level	18	0	0.917	1.00	1830	
Ramp	472	0.77	Level	14	0	0.935	1.00	656	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 1830 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	1830	Exhibit 13-8	4800	No
			V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		1174	Exhibit 13-8	4800	No	
			V <sub>R</sub>		656	Exhibit 13-10	2000	No	
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	1830	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 18.2 (pc/mi/ln) LOS = B (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.487 (Exhibit 13-12) S <sub>R</sub> = 56.4 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 56.4 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1695		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			112				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1695	0.92	Level	18	0	0.917	1.00	2008	
Ramp	112	0.77	Level	14	0	0.935	1.00	156	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 2008 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2008	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1852	Exhibit 13-8	4800	No
					V <sub>R</sub>	156	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2008	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 19.7 (pc/mi/ln) LOS = B (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.442 (Exhibit 13-12) S <sub>R</sub> = 57.6 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.6 mph (Exhibit 13-13)				



RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 EB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		PM Peak			Analysis Year		Cumulative		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1567		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			695				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1567	0.92	Level	18	0	0.917	1.00	1857	
Ramp	695	0.86	Level	6	0	0.971	1.00	832	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1857 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2689	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2689	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 24.5 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.351 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	60.2 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	60.2 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580/Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1806		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			252				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1806	0.92	Level	18	0	0.917	1.00	2140	
Ramp	252	0.86	Level	6	0	0.971	1.00	302	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 2140 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2442	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2442	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 22.8 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.338 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	60.5 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	60.5 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			2058		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			491				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	2058	0.92	Level	18	0	0.917	1.00	2438	
Ramp	491	0.91	Level	2	0	0.990	1.00	545	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13)				
L <sub>EQ</sub> =					L <sub>EQ</sub> =				
P <sub>FM</sub> =					P <sub>FD</sub> =				
V <sub>12</sub> =					V <sub>12</sub> =				
V <sub>3</sub> or V <sub>av34</sub>					V <sub>3</sub> or V <sub>av34</sub>				
Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If Yes, V <sub>12a</sub> =					If Yes, V <sub>12a</sub> =				
pc/h (Equation 13-16, 13-18, or 13-19)					pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2438	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1893	Exhibit 13-8	4800	No
					V <sub>R</sub>	545	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2438	Exhibit 13-8		4400:All
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
D <sub>R</sub> = 5.475 + 0.00734 v <sub>R</sub> + 0.0078 V <sub>12</sub> - 0.00627 L <sub>A</sub>					D <sub>R</sub> = 4.252 + 0.0086 V <sub>12</sub> - 0.009 L <sub>D</sub>				
D <sub>R</sub> = (pc/mi/ln)					D <sub>R</sub> = 23.4 (pc/mi/ln)				
LOS = (Exhibit 13-2)					LOS = C (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11)					D <sub>S</sub> = 0.477 (Exhibit 13-12)				
S <sub>R</sub> = mph (Exhibit 13-11)					S <sub>R</sub> = 56.6 mph (Exhibit 13-12)				
S <sub>0</sub> = mph (Exhibit 13-11)					S <sub>0</sub> = N/A mph (Exhibit 13-12)				
S = mph (Exhibit 13-13)					S = 56.6 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			2118		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			312				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	2118	0.92	Level	18	0	0.917	1.00	2509	
Ramp	312	0.91	Level	2	0	0.990	1.00	346	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 2509 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2509	Exhibit 13-8	4800	No
			V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		2163	Exhibit 13-8	4800	No	
			V <sub>R</sub>		346	Exhibit 13-10	2000	No	
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2509	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 24.0 (pc/mi/ln) LOS = C (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.459 (Exhibit 13-12) S <sub>R</sub> = 57.1 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.1 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 WB		
Agency or Company					Junction		I-580/Corral Hollow		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		PM Peak			Analysis Year		Cumulative		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1139		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			271				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1139	0.92	Level	18	0	0.917	1.00	1349	
Ramp	271	0.83	Level	7	0	0.966	1.00	338	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1349 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	1687	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	1687	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 16.0 (pc/mi/ln) LOS = B (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.298 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.7 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.7 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 WB		
Agency or Company					Junction		I-580/Lammers Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		PM Peak			Analysis Year		Cumulative		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1318		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			246				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1318	0.92	Level	18	0	0.917	1.00	1562	
Ramp	246	0.83	Level	7	0	0.966	1.00	307	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1562 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	1869	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	1869	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 17.4 (pc/mi/ln) LOS = B (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.302 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.5 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.5 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1245		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			106				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1245	0.92	Level	18	0	0.917	1.00	1475	
Ramp	106	0.93	Level	4	0	0.980	1.00	116	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 1475 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	1475	Exhibit 13-8	4800	No
			V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1359	Exhibit 13-8	4800	No		
			V <sub>R</sub>	116	Exhibit 13-10	2000	No		
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	1475	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 15.1 (pc/mi/ln) LOS = B (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.438 (Exhibit 13-12) S <sub>R</sub> = 57.7 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.7 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1410		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			92				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1410	0.92	Level	18	0	0.917	1.00	1671	
Ramp	92	0.93	Level	4	0	0.980	1.00	101	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 1671 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	1671	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1570	Exhibit 13-8	4800	No
					V <sub>R</sub>	101	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	1671	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 16.8 (pc/mi/ln) LOS = B (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.437 (Exhibit 13-12) S <sub>R</sub> = 57.8 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.8 mph (Exhibit 13-13)				



RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 EB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		AM Peak			Analysis Year		Cumulative Plus Buildout		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			67		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			129				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	67	0.92	Level	18	0	0.917	1.00	79	
Ramp	129	0.70	Level	11	0	0.948	1.00	194	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 79 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	273	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	273	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 5.9 (pc/mi/ln) LOS = A (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.299 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.6 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.6 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580/Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative Plus Project				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			204		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			70				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	204	0.92	Level	18	0	0.917	1.00	242	
Ramp	70	0.70	Level	11	0	0.948	1.00	106	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 242 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	348	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	348	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 6.6 (pc/mi/ln) LOS = A (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.299 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.6 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.6 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative Plus Project				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			274		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			207				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	274	0.92	Level	18	0	0.917	1.00	325	
Ramp	207	0.69	Level	19	0	0.913	1.00	329	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 325 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	325	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	-4	Exhibit 13-8	4800	No
					V <sub>R</sub>	329	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	325	Exhibit 13-8		4400:All
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 5.2 (pc/mi/ln) LOS = A (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.458 (Exhibit 13-12) S <sub>R</sub> = 57.2 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.2 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative Plus Project				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			355		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			151				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	355	0.92	Level	18	0	0.917	1.00	421	
Ramp	151	0.69	Level	19	0	0.913	1.00	240	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13)				
L <sub>EQ</sub> =					L <sub>EQ</sub> =				
P <sub>FM</sub> =					P <sub>FD</sub> =				
V <sub>12</sub> =					V <sub>12</sub> =				
V <sub>3</sub> or V <sub>av34</sub>					V <sub>3</sub> or V <sub>av34</sub>				
Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If Yes, V <sub>12a</sub> =					If Yes, V <sub>12a</sub> =				
pc/h (Equation 13-16, 13-18, or 13-19)					pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	421	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	181	Exhibit 13-8	4800	No
					V <sub>R</sub>	240	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	421	Exhibit 13-8		4400:All
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
D <sub>R</sub> = 5.475 + 0.00734 v <sub>R</sub> + 0.0078 V <sub>12</sub> - 0.00627 L <sub>A</sub>					D <sub>R</sub> = 4.252 + 0.0086 V <sub>12</sub> - 0.009 L <sub>D</sub>				
D <sub>R</sub> = (pc/mi/ln)					D <sub>R</sub> = 6.1 (pc/mi/ln)				
LOS = (Exhibit 13-2)					LOS = A (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11)					D <sub>S</sub> = 0.450 (Exhibit 13-12)				
S <sub>R</sub> = mph (Exhibit 13-11)					S <sub>R</sub> = 57.4 mph (Exhibit 13-12)				
S <sub>0</sub> = mph (Exhibit 13-11)					S <sub>0</sub> = N/A mph (Exhibit 13-12)				
S = mph (Exhibit 13-13)					S = 57.4 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 WB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		AM Peak			Analysis Year		Cumulative Plus Project		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1242		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			702				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1242	0.92	Level	18	0	0.917	1.00	1472	
Ramp	702	0.72	Level	13	0	0.939	1.00	1038	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1472 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2510	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2510	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 22.1 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.325 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	60.9 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	60.9 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580/Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative Plus Project				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1663		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			391				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1663	0.92	Level	18	0	0.917	1.00	1970	
Ramp	391	0.72	Level	13	0	0.939	1.00	578	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1970 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2548	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2548	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 22.6 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> = 0.327 (Exhibit 13-11) S <sub>R</sub> = 60.8 mph (Exhibit 13-11) S <sub>0</sub> = N/A mph (Exhibit 13-11) S = 60.8 mph (Exhibit 13-13)					D <sub>S</sub> = (Exhibit 13-12) S <sub>R</sub> = mph (Exhibit 13-12) S <sub>0</sub> = mph (Exhibit 13-12) S = mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative Plus Project				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1794		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			552				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1794	0.92	Level	18	0	0.917	1.00	2126	
Ramp	552	0.77	Level	14	0	0.935	1.00	767	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 2126 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2126	Exhibit 13-8	4800	No
			V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1359	Exhibit 13-8	4800	No		
			V <sub>R</sub>	767	Exhibit 13-10	2000	No		
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2126	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 20.7 (pc/mi/ln) LOS = C (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.497 (Exhibit 13-12) S <sub>R</sub> = 56.1 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 56.1 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative Plus Project				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1944		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			281				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1944	0.92	Level	18	0	0.917	1.00	2303	
Ramp	281	0.77	Level	14	0	0.935	1.00	390	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 2303 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2303	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1913	Exhibit 13-8	4800	No
					V <sub>R</sub>	390	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2303	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 22.3 (pc/mi/ln) LOS = C (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.463 (Exhibit 13-12) S <sub>R</sub> = 57.0 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.0 mph (Exhibit 13-13)				



RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580/Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative Plus Project				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1666		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			875				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1666	0.92	Level	18	0	0.917	1.00	1974	
Ramp	875	0.86	Level	6	0	0.971	1.00	1048	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1974 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	3022	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	3022	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 27.0 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.374 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	59.5 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	59.5 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580/Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative Plus Project				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1946		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			351				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1946	0.92	Level	18	0	0.917	1.00	2306	
Ramp	351	0.86	Level	6	0	0.971	1.00	420	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13)				
L <sub>EQ</sub> =					L <sub>EQ</sub> =				
P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6)					P <sub>FD</sub> = using Equation (Exhibit 13-7)				
V <sub>12</sub> = 2306 pc/h					V <sub>12</sub> = pc/h				
V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17)					V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17)				
Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No				
If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2726	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2726	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
D <sub>R</sub> = 25.0 (pc/mi/ln)					D <sub>R</sub> = (pc/mi/ln)				
LOS = C (Exhibit 13-2)					LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> = 0.353 (Exhibit 13-11)					D <sub>S</sub> = (Exhibit 13-12)				
S <sub>R</sub> = 60.1 mph (Exhibit 13-11)					S <sub>R</sub> = mph (Exhibit 13-12)				
S <sub>0</sub> = N/A mph (Exhibit 13-11)					S <sub>0</sub> = mph (Exhibit 13-12)				
S = 60.1 mph (Exhibit 13-13)					S = mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET										
<b>General Information</b>					<b>Site Information</b>					
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB					
Agency or Company				Junction	I-580 and Corral Hollow Road					
Date Performed	8/14/2014			Jurisdiction						
Analysis Time Period	PM Peak			Analysis Year	Cumulative Plus Project					
Project Description Tracy Hills Specific Plan										
<b>Inputs</b>										
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp			
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On			
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off			
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft			
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			2297		V <sub>D</sub> = veh/h			
		Ramp Volume, V <sub>R</sub>			631					
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0					
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0					
<b>Conversion to pc/h Under Base Conditions</b>										
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>		
Freeway	2297	0.92	Level	18	0	0.917	1.00	2721		
Ramp	631	0.91	Level	2	0	0.990	1.00	700		
UpStream										
DownStream										
<b>Merge Areas</b>					<b>Diverge Areas</b>					
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>					
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13)					
L <sub>EQ</sub> =					L <sub>EQ</sub> =					
P <sub>FM</sub> =					P <sub>FD</sub> =					
V <sub>12</sub> =					V <sub>12</sub> =					
V <sub>3</sub> or V <sub>av34</sub>					V <sub>3</sub> or V <sub>av34</sub>					
Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
If Yes, V <sub>12a</sub> =					If Yes, V <sub>12a</sub> =					
pc/h (Equation 13-16, 13-18, or 13-19)					pc/h (Equation 13-16, 13-18, or 13-19)					
<b>Capacity Checks</b>					<b>Capacity Checks</b>					
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?	
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2721	Exhibit 13-8	4800	No	
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	2021	Exhibit 13-8	4800	No	
					V <sub>R</sub>	700	Exhibit 13-10	2000	No	
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>					
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?	
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2721	Exhibit 13-8		4400:All	No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>					
D <sub>R</sub> = 5.475 + 0.00734 v <sub>R</sub> + 0.0078 V <sub>12</sub> - 0.00627 L <sub>A</sub>					D <sub>R</sub> = 4.252 + 0.0086 V <sub>12</sub> - 0.009 L <sub>D</sub>					
D <sub>R</sub> = (pc/mi/ln)					D <sub>R</sub> = 25.9 (pc/mi/ln)					
LOS = (Exhibit 13-2)					LOS = C (Exhibit 13-2)					
<b>Speed Determination</b>					<b>Speed Determination</b>					
M <sub>S</sub> = (Exhibit 13-11)					D <sub>S</sub> = 0.491 (Exhibit 13-12)					
S <sub>R</sub> = mph (Exhibit 13-11)					S <sub>R</sub> = 56.3 mph (Exhibit 13-12)					
S <sub>0</sub> = mph (Exhibit 13-11)					S <sub>0</sub> = N/A mph (Exhibit 13-12)					
S = mph (Exhibit 13-13)					S = 56.3 mph (Exhibit 13-13)					

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative Plus Project				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			2527		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			581				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	2527	0.92	Level	18	0	0.917	1.00	2994	
Ramp	581	0.91	Level	2	0	0.990	1.00	645	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13)				
L <sub>EQ</sub> =					L <sub>EQ</sub> =				
P <sub>FM</sub> =					P <sub>FD</sub> =				
V <sub>12</sub> =					V <sub>12</sub> =				
V <sub>3</sub> or V <sub>av34</sub>					V <sub>3</sub> or V <sub>av34</sub>				
Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If Yes, V <sub>12a</sub> =					If Yes, V <sub>12a</sub> =				
pc/h (Equation 13-16, 13-18, or 13-19)					pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2994	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	2349	Exhibit 13-8	4800	No
					V <sub>R</sub>	645	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2994	Exhibit 13-8		4400:All
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
D <sub>R</sub> = 5.475 + 0.00734 v <sub>R</sub> + 0.0078 V <sub>12</sub> - 0.00627 L <sub>A</sub>					D <sub>R</sub> = 4.252 + 0.0086 V <sub>12</sub> - 0.009 L <sub>D</sub>				
D <sub>R</sub> = (pc/mi/ln)					D <sub>R</sub> = 28.2 (pc/mi/ln)				
LOS = (Exhibit 13-2)					LOS = D (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11)					D <sub>S</sub> = 0.486 (Exhibit 13-12)				
S <sub>R</sub> = mph (Exhibit 13-11)					S <sub>R</sub> = 56.4 mph (Exhibit 13-12)				
S <sub>0</sub> = mph (Exhibit 13-11)					S <sub>0</sub> = N/A mph (Exhibit 13-12)				
S = mph (Exhibit 13-13)					S = 56.4 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 WB		
Agency or Company					Junction		I-580/Corral Hollow		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		PM Peak			Analysis Year		Cumulative Plus Project		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1198		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			411				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1198	0.92	Level	18	0	0.917	1.00	1419	
Ramp	411	0.83	Level	7	0	0.966	1.00	513	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1419 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	1932	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	1932	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 17.8 (pc/mi/ln) LOS = B (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.304 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.5 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.5 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580/Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative Plus Project				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1458		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			595				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1458	0.92	Level	18	0	0.917	1.00	1727	
Ramp	595	0.83	Level	7	0	0.966	1.00	742	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1727 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2469	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2469	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 21.9 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.323 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.0 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.0 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative Plus Project				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1404		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			206				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1404	0.92	Level	18	0	0.917	1.00	1663	
Ramp	206	0.93	Level	4	0	0.980	1.00	226	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 1663 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	1663	Exhibit 13-8	4800	No
			V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1437	Exhibit 13-8	4800	No		
			V <sub>R</sub>	226	Exhibit 13-10	2000	No		
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	1663	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 16.8 (pc/mi/ln) LOS = B (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.448 (Exhibit 13-12) S <sub>R</sub> = 57.4 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.4 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative Plus Project				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1609		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			151				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1609	0.92	Level	18	0	0.917	1.00	1906	
Ramp	151	0.93	Level	4	0	0.980	1.00	166	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 1906 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	1906	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1740	Exhibit 13-8	4800	No
					V <sub>R</sub>	166	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	1906	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 18.8 (pc/mi/ln) LOS = B (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.443 (Exhibit 13-12) S <sub>R</sub> = 57.6 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.6 mph (Exhibit 13-13)				



RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative+Project Mitigated				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			2		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			355		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			151				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	355	0.92	Level	18	0	0.917	1.00	421	
Ramp	151	0.69	Level	19	0	0.913	1.00	240	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 421 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	421	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	181	Exhibit 13-8	4800	No
					V <sub>R</sub>	240	Exhibit 13-10	4000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	421	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = -0.2 (pc/mi/ln) LOS = A (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.450 (Exhibit 13-12) S <sub>R</sub> = 57.4 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.4 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative+Project Mitigated				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			2		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input type="checkbox"/> Yes <input type="checkbox"/> On		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			2527		L <sub>down</sub> = ft		
		Ramp Volume, V <sub>R</sub>			581		V <sub>D</sub> = veh/h		
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	2527	0.92	Level	18	0	0.917	1.00	2994	
Ramp	581	0.91	Level	2	0	0.990	1.00	645	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 2994 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2994	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	2349	Exhibit 13-8	4800	No
					V <sub>R</sub>	645	Exhibit 13-10	4000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2994	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 21.9 (pc/mi/ln) LOS = C (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.486 (Exhibit 13-12) S <sub>R</sub> = 56.4 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 56.4 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 EB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		AM Peak			Analysis Year		Cumulative Plus Buildout		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			87		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			169				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	87	0.92	Level	18	0	0.917	1.00	103	
Ramp	169	0.70	Level	11	0	0.948	1.00	255	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 103 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	358	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	358	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 6.6 (pc/mi/ln) LOS = A (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.299 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.6 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.6 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580/Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative Plus Buildout				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			304		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			90				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	304	0.92	Level	18	0	0.917	1.00	360	
Ramp	90	0.70	Level	11	0	0.948	1.00	136	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 360 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	496	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	496	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 7.7 (pc/mi/ln) LOS = A (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.300 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.6 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.6 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative Plus Buildout				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			394		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			307				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	394	0.92	Level	18	0	0.917	1.00	467	
Ramp	307	0.69	Level	19	0	0.913	1.00	487	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 467 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	467	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	-20	Exhibit 13-8	4800	No
					V <sub>R</sub>	487	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	467	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 6.5 (pc/mi/ln) LOS = A (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.472 (Exhibit 13-12) S <sub>R</sub> = 56.8 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 56.8 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative Plus Buildout				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			475		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			171				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	475	0.92	Level	18	0	0.917	1.00	563	
Ramp	171	0.69	Level	19	0	0.913	1.00	271	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 563 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	563	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	292	Exhibit 13-8	4800	No
					V <sub>R</sub>	271	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	563	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 7.3 (pc/mi/ln) LOS = A (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11)					D <sub>S</sub> = 0.452 (Exhibit 13-12)				
S <sub>R</sub> = mph (Exhibit 13-11)					S <sub>R</sub> = 57.3 mph (Exhibit 13-12)				
S <sub>0</sub> = mph (Exhibit 13-11)					S <sub>0</sub> = N/A mph (Exhibit 13-12)				
S = mph (Exhibit 13-13)					S = 57.3 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580/Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative Plus Buildout				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1262		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			802				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1262	0.92	Level	18	0	0.917	1.00	1495	
Ramp	802	0.72	Level	13	0	0.939	1.00	1186	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1495 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2681	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2681	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 23.3 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.334 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	60.6 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	60.6 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 WB		
Agency or Company					Junction		I-580/Lammers Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		AM Peak			Analysis Year		Cumulative Plus Buildout		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1763		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			421				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1763	0.92	Level	18	0	0.917	1.00	2089	
Ramp	421	0.72	Level	13	0	0.939	1.00	623	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 2089 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2712	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2712	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 23.8 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> = 0.336 (Exhibit 13-11) S <sub>R</sub> = 60.6 mph (Exhibit 13-11) S <sub>0</sub> = N/A mph (Exhibit 13-11) S = 60.6 mph (Exhibit 13-13)					D <sub>S</sub> = (Exhibit 13-12) S <sub>R</sub> = mph (Exhibit 13-12) S <sub>0</sub> = mph (Exhibit 13-12) S = mph (Exhibit 13-13)				



RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 WB		
Agency or Company					Junction		I-580 and Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		AM Peak			Analysis Year		Cumulative Plus Buildout		
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N				2		Downstream Adj Ramp	
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N				1		<input type="checkbox"/> Yes <input type="checkbox"/> On	
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>						<input checked="" type="checkbox"/> No <input type="checkbox"/> Off	
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>				200		L <sub>down</sub> = ft	
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>				1874		V <sub>D</sub> = veh/h	
		Ramp Volume, V <sub>R</sub>				612			
		Freeway Free-Flow Speed, S <sub>FF</sub>				70.0			
		Ramp Free-Flow Speed, S <sub>FR</sub>				35.0			
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1874	0.92	Level	18	0	0.917	1.00	2220	
Ramp	612	0.77	Level	14	0	0.935	1.00	850	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 2220 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2220	Exhibit 13-8	4800	No
			V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>			1370	Exhibit 13-8	4800	No
			V <sub>R</sub>			850	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2220	Exhibit 13-8		4400:All
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 21.5 (pc/mi/ln) LOS = C (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.505 (Exhibit 13-12) S <sub>R</sub> = 55.9 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 55.9 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative Plus Buildout				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			2064		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			301				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	2064	0.92	Level	18	0	0.917	1.00	2445	
Ramp	301	0.77	Level	14	0	0.935	1.00	418	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 2445 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2445	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	2027	Exhibit 13-8	4800	No
					V <sub>R</sub>	418	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2445	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 23.5 (pc/mi/ln) LOS = C (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.466 (Exhibit 13-12) S <sub>R</sub> = 57.0 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.0 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580/Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative Plus Buildout				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1706		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			985				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1706	0.92	Level	18	0	0.917	1.00	2021	
Ramp	985	0.86	Level	6	0	0.971	1.00	1180	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13)				
L <sub>EQ</sub> =					L <sub>EQ</sub> =				
P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6)					P <sub>FD</sub> = using Equation (Exhibit 13-7)				
V <sub>12</sub> = 2021 pc/h					V <sub>12</sub> = pc/h				
V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17)					V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17)				
Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No				
If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	3201	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	3201	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
D <sub>R</sub> = 28.3 (pc/mi/ln)					D <sub>R</sub> = (pc/mi/ln)				
LOS = D (Exhibit 13-2)					LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> = 0.389 (Exhibit 13-11)					D <sub>S</sub> = (Exhibit 13-12)				
S <sub>R</sub> = 59.1 mph (Exhibit 13-11)					S <sub>R</sub> = mph (Exhibit 13-12)				
S <sub>0</sub> = N/A mph (Exhibit 13-11)					S <sub>0</sub> = mph (Exhibit 13-12)				
S = 59.1 mph (Exhibit 13-13)					S = mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 EB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		PM Peak			Analysis Year		Existing		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2			Downstream Adj Ramp	
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1			<input type="checkbox"/> Yes <input type="checkbox"/> On	
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250			<input checked="" type="checkbox"/> No <input type="checkbox"/> Off	
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>						L <sub>down</sub> = ft	
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1433			V <sub>D</sub> = veh/h	
		Ramp Volume, V <sub>R</sub>			333				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1433	0.92	Level	18	0	0.917	1.00	1698	
Ramp	333	0.86	Level	6	0	0.971	1.00	399	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1698 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2097	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2097	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 20.1 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.325 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	60.9 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	60.9 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative Plus Buildout				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			2547		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			841				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	2547	0.92	Level	18	0	0.917	1.00	3018	
Ramp	841	0.91	Level	2	0	0.990	1.00	933	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13)				
L <sub>EQ</sub> =					L <sub>EQ</sub> =				
P <sub>FM</sub> =					P <sub>FD</sub> =				
V <sub>12</sub> =					V <sub>12</sub> =				
V <sub>3</sub> or V <sub>av34</sub>					V <sub>3</sub> or V <sub>av34</sub>				
Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If Yes, V <sub>12a</sub> =					If Yes, V <sub>12a</sub> =				
pc/h (Equation 13-16, 13-18, or 13-19)					pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	3018	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	2085	Exhibit 13-8	4800	No
					V <sub>R</sub>	933	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	3018	Exhibit 13-8		4400:All
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
D <sub>R</sub> = 5.475 + 0.00734 v <sub>R</sub> + 0.0078 V <sub>12</sub> - 0.00627 L <sub>A</sub>					D <sub>R</sub> = 4.252 + 0.0086 V <sub>12</sub> - 0.009 L <sub>D</sub>				
D <sub>R</sub> = (pc/mi/ln)					D <sub>R</sub> = 28.4 (pc/mi/ln)				
LOS = (Exhibit 13-2)					LOS = D (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11)					D <sub>S</sub> = 0.512 (Exhibit 13-12)				
S <sub>R</sub> = mph (Exhibit 13-11)					S <sub>R</sub> = 55.7 mph (Exhibit 13-12)				
S <sub>0</sub> = mph (Exhibit 13-11)					S <sub>0</sub> = N/A mph (Exhibit 13-12)				
S = mph (Exhibit 13-13)					S = 55.7 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative Plus Buildout				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			2757		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			601				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	2757	0.92	Level	18	0	0.917	1.00	3266	
Ramp	601	0.91	Level	2	0	0.990	1.00	667	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13)				
L <sub>EQ</sub> =					L <sub>EQ</sub> =				
P <sub>FM</sub> =					P <sub>FD</sub> =				
V <sub>12</sub> =					V <sub>12</sub> =				
V <sub>3</sub> or V <sub>av34</sub>					V <sub>3</sub> or V <sub>av34</sub>				
Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If Yes, V <sub>12a</sub> =					If Yes, V <sub>12a</sub> =				
pc/h (Equation 13-16, 13-18, or 13-19)					pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	3266	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	2599	Exhibit 13-8	4800	No
					V <sub>R</sub>	667	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	3266	Exhibit 13-8		4400:All
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
D <sub>R</sub> = 5.475 + 0.00734 v <sub>R</sub> + 0.0078 V <sub>12</sub> - 0.00627 L <sub>A</sub>					D <sub>R</sub> = 4.252 + 0.0086 V <sub>12</sub> - 0.009 L <sub>D</sub>				
D <sub>R</sub> = (pc/mi/ln)					D <sub>R</sub> = 30.5 (pc/mi/ln)				
LOS = (Exhibit 13-2)					LOS = D (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11)					D <sub>S</sub> = 0.488 (Exhibit 13-12)				
S <sub>R</sub> = mph (Exhibit 13-11)					S <sub>R</sub> = 56.3 mph (Exhibit 13-12)				
S <sub>0</sub> = mph (Exhibit 13-11)					S <sub>0</sub> = N/A mph (Exhibit 13-12)				
S = mph (Exhibit 13-13)					S = 56.3 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580/Corral Hollow				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative Plus Buildout				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1218		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			691				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1218	0.92	Level	18	0	0.917	1.00	1443	
Ramp	691	0.83	Level	7	0	0.966	1.00	862	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1443 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2305	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2305	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 20.5 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.316 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.1 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.1 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580/Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative Plus Buildout				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1738		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			685				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1738	0.92	Level	18	0	0.917	1.00	2059	
Ramp	685	0.83	Level	7	0	0.966	1.00	854	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 2059 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2913	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2913	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 25.3 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> = 0.349 (Exhibit 13-11) S <sub>R</sub> = 60.2 mph (Exhibit 13-11) S <sub>0</sub> = N/A mph (Exhibit 13-11) S = 60.2 mph (Exhibit 13-13)					D <sub>S</sub> = (Exhibit 13-12) S <sub>R</sub> = mph (Exhibit 13-12) S <sub>0</sub> = mph (Exhibit 13-12) S = mph (Exhibit 13-13)				



RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative Plus Buildout				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1484		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			266				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1484	0.92	Level	18	0	0.917	1.00	1758	
Ramp	266	0.93	Level	4	0	0.980	1.00	292	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 1758 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	1758	Exhibit 13-8	4800	No
			V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1466	Exhibit 13-8	4800	No		
			V <sub>R</sub>	292	Exhibit 13-10	2000	No		
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	1758	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 17.6 (pc/mi/ln) LOS = B (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.454 (Exhibit 13-12) S <sub>R</sub> = 57.3 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.3 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative Plus Buildout				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1909		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			171				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1909	0.92	Level	18	0	0.917	1.00	2262	
Ramp	171	0.93	Level	4	0	0.980	1.00	188	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 2262 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2262	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	2074	Exhibit 13-8	4800	No
					V <sub>R</sub>	188	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2262	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 21.9 (pc/mi/ln) LOS = C (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.445 (Exhibit 13-12) S <sub>R</sub> = 57.5 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.5 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580/Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative+Buildout Mitigated				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			2		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			87		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			169				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	87	0.92	Level	18	0	0.917	1.00	103	
Ramp	169	0.70	Level	11	0	0.948	1.00	255	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 103 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	358	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	358	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 1.9 (pc/mi/ln) LOS = A (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.217 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	63.9 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	63.9 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580/Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative+Buildout Mitigated				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			2		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1706		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			985				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1706	0.92	Level	18	0	0.917	1.00	2021	
Ramp	985	0.86	Level	6	0	0.971	1.00	1180	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 2021 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	3201	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	3201	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 23.6 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.307 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.4 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.4 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative+Buildout Mitigated				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			2		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			394		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			307				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	394	0.92	Level	18	0	0.917	1.00	467	
Ramp	307	0.69	Level	19	0	0.913	1.00	487	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 467 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	467	Exhibit 13-8	4800	No
			V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>			-20	Exhibit 13-8	4800	No
			V <sub>R</sub>			487	Exhibit 13-10	4000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	467	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 0.2 (pc/mi/ln) LOS = A (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.472 (Exhibit 13-12) S <sub>R</sub> = 56.8 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 56.8 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative+Buildout Mitigated				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			2		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			2547		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			841				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	2547	0.92	Level	18	0	0.917	1.00	3018	
Ramp	841	0.91	Level	2	0	0.990	1.00	933	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13)				
L <sub>EQ</sub> =					L <sub>EQ</sub> =				
P <sub>FM</sub> =					P <sub>FD</sub> =				
V <sub>12</sub> =					V <sub>12</sub> =				
V <sub>3</sub> or V <sub>av34</sub>					V <sub>3</sub> or V <sub>av34</sub>				
Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If Yes, V <sub>12a</sub> =					If Yes, V <sub>12a</sub> =				
pc/h (Equation 13-16, 13-18, or 13-19)					pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	3018	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	2085	Exhibit 13-8	4800	No
					V <sub>R</sub>	933	Exhibit 13-10	4000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	3018	Exhibit 13-8		4400:All
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
D <sub>R</sub> = 5.475 + 0.00734 v <sub>R</sub> + 0.0078 V <sub>12</sub> - 0.00627 L <sub>A</sub>					D <sub>R</sub> = 4.252 + 0.0086 V <sub>12</sub> - 0.009 L <sub>D</sub>				
D <sub>R</sub> = (pc/mi/ln)					D <sub>R</sub> = 22.1 (pc/mi/ln)				
LOS = (Exhibit 13-2)					LOS = C (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11)					D <sub>S</sub> = 0.512 (Exhibit 13-12)				
S <sub>R</sub> = mph (Exhibit 13-11)					S <sub>R</sub> = 55.7 mph (Exhibit 13-12)				
S <sub>0</sub> = mph (Exhibit 13-11)					S <sub>0</sub> = N/A mph (Exhibit 13-12)				
S = mph (Exhibit 13-13)					S = 55.7 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Cumulative+Buildout Mitigated				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			2		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			475		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			171				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	475	0.92	Level	18	0	0.917	1.00	563	
Ramp	171	0.69	Level	19	0	0.913	1.00	271	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 563 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	563	Exhibit 13-8	4800	No
			V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	292	Exhibit 13-8	4800	No		
			V <sub>R</sub>	271	Exhibit 13-10	4000	No		
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	563	Exhibit 13-8	4400:All	No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 1.0 (pc/mi/ln) LOS = A (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.452 (Exhibit 13-12) S <sub>R</sub> = 57.3 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.3 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Lammers Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Cumulative+Buildout Mitigated				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			2		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			2757		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			601				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	2757	0.92	Level	18	0	0.917	1.00	3266	
Ramp	601	0.91	Level	2	0	0.990	1.00	667	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13)				
L <sub>EQ</sub> =					L <sub>EQ</sub> =				
P <sub>FM</sub> =					P <sub>FD</sub> =				
V <sub>12</sub> =					V <sub>12</sub> =				
V <sub>3</sub> or V <sub>av34</sub>					V <sub>3</sub> or V <sub>av34</sub>				
Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No					Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If Yes, V <sub>12a</sub> =					If Yes, V <sub>12a</sub> =				
pc/h (Equation 13-16, 13-18, or 13-19)					pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	3266	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	2599	Exhibit 13-8	4800	No
					V <sub>R</sub>	667	Exhibit 13-10	4000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	3266	Exhibit 13-8		4400:All
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
D <sub>R</sub> = 5.475 + 0.00734 v <sub>R</sub> + 0.0078 V <sub>12</sub> - 0.00627 L <sub>A</sub>					D <sub>R</sub> = 4.252 + 0.0086 V <sub>12</sub> - 0.009 L <sub>D</sub>				
D <sub>R</sub> = (pc/mi/ln)					D <sub>R</sub> = 24.2 (pc/mi/ln)				
LOS = (Exhibit 13-2)					LOS = C (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11)					D <sub>S</sub> = 0.488 (Exhibit 13-12)				
S <sub>R</sub> = mph (Exhibit 13-11)					S <sub>R</sub> = 56.3 mph (Exhibit 13-12)				
S <sub>0</sub> = mph (Exhibit 13-11)					S <sub>0</sub> = N/A mph (Exhibit 13-12)				
S = mph (Exhibit 13-13)					S = 56.3 mph (Exhibit 13-13)				



RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 EB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		AM Peak			Analysis Year		Existing Plus Phase IA		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2			Downstream Adj Ramp	
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1			<input type="checkbox"/> Yes <input type="checkbox"/> On	
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250			<input checked="" type="checkbox"/> No <input type="checkbox"/> Off	
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>						L <sub>down</sub> = ft	
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			178			V <sub>D</sub> = veh/h	
		Ramp Volume, V <sub>R</sub>			74				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	178	0.92	Level	18	0	0.917	1.00	211	
Ramp	74	0.70	Level	11	0	0.948	1.00	112	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 211 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	323	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	323	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 6.4 (pc/mi/ln) LOS = A (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.299 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.6 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.6 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Existing Plus Phase I				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			339		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			161				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	339	0.92	Level	18	0	0.917	1.00	402	
Ramp	161	0.69	Level	19	0	0.913	1.00	256	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 402 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	402	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	146	Exhibit 13-8	4800	No
					V <sub>R</sub>	256	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	402	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 5.9 (pc/mi/ln) LOS = A (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.451 (Exhibit 13-12) S <sub>R</sub> = 57.4 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.4 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 WB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		AM Peak			Analysis Year		Existing Plus Phase IA		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1689		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			650				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1689	0.92	Level	18	0	0.917	1.00	2001	
Ramp	650	0.72	Level	13	0	0.939	1.00	961	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 2001 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2962	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2962	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 25.6 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> = 0.352 (Exhibit 13-11) S <sub>R</sub> = 60.1 mph (Exhibit 13-11) S <sub>0</sub> = N/A mph (Exhibit 13-11) S = 60.1 mph (Exhibit 13-13)					D <sub>s</sub> = (Exhibit 13-12) S <sub>R</sub> = mph (Exhibit 13-12) S <sub>0</sub> = mph (Exhibit 13-12) S = mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	AM Peak			Analysis Year	Existing Plus Phase IA				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1921		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			232				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1921	0.92	Level	18	0	0.917	1.00	2276	
Ramp	232	0.77	Level	14	0	0.935	1.00	322	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 2276 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2276	Exhibit 13-8	4800	No
			V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		1954	Exhibit 13-8	4800	No	
			V <sub>R</sub>		322	Exhibit 13-10	2000	No	
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2276	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 22.0 (pc/mi/ln) LOS = C (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11)					D <sub>S</sub> = 0.457 (Exhibit 13-12)				
S <sub>R</sub> = mph (Exhibit 13-11)					S <sub>R</sub> = 57.2 mph (Exhibit 13-12)				
S <sub>0</sub> = mph (Exhibit 13-11)					S <sub>0</sub> = N/A mph (Exhibit 13-12)				
S = mph (Exhibit 13-13)					S = 57.2 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		Kimley-Horn & Associates			Freeway/Dir of Travel		I-580 EB		
Agency or Company					Junction		I-580/Corral Hollow Road		
Date Performed		8/14/2014			Jurisdiction				
Analysis Time Period		PM Peak			Analysis Year		Existing Plus Phase IA		
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			250		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1433		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			397				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1433	0.92	Level	18	0	0.917	1.00	1698	
Ramp	397	0.86	Level	6	0	0.971	1.00	475	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1698 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	2173	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	2173	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 20.6 (pc/mi/ln) LOS = C (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> = 0.328 (Exhibit 13-11) S <sub>R</sub> = 60.8 mph (Exhibit 13-11) S <sub>0</sub> = N/A mph (Exhibit 13-11) S = 60.8 mph (Exhibit 13-13)					D <sub>S</sub> = (Exhibit 13-12) S <sub>R</sub> = mph (Exhibit 13-12) S <sub>0</sub> = mph (Exhibit 13-12) S = mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 EB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Existing Plus Phase IA				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			2074		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			641				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	2074	0.92	Level	18	0	0.917	1.00	2457	
Ramp	641	0.91	Level	8	0	0.962	1.00	733	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 2457 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	2457	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1724	Exhibit 13-8	4800	No
					V <sub>R</sub>	733	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	2457	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 23.6 (pc/mi/ln) LOS = C (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.494 (Exhibit 13-12) S <sub>R</sub> = 56.2 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 56.2 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580/Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Existing Plus Phase IA				
Project Description Tracy Hills Specific Plan									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>			400		<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>					L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			967		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			663				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			55.0				
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	967	0.92	Level	18	0	0.917	1.00	1146	
Ramp	663	0.83	Level	5	0	0.976	1.00	819	
UpStream									
DownStream									
Merge Areas					Diverge Areas				
Estimation of v <sub>12</sub>					Estimation of v <sub>12</sub>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P <sub>FM</sub> = 1.000 using Equation (Exhibit 13-6) V <sub>12</sub> = 1146 pc/h V <sub>3</sub> or V <sub>av34</sub> = 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P <sub>FD</sub> = using Equation (Exhibit 13-7) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> = pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>	1965	Exhibit 13-8		No	V <sub>F</sub>		Exhibit 13-8		
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>		Exhibit 13-8		
					V <sub>R</sub>		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>	1965	Exhibit 13-8	4600:All	No	V <sub>12</sub>		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = 17.9 (pc/mi/ln) LOS = B (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
M <sub>S</sub> =	0.305 (Exhibit 13-11)				D <sub>S</sub> =	(Exhibit 13-12)			
S <sub>R</sub> =	61.5 mph (Exhibit 13-11)				S <sub>R</sub> =	mph (Exhibit 13-12)			
S <sub>0</sub> =	N/A mph (Exhibit 13-11)				S <sub>0</sub> =	mph (Exhibit 13-12)			
S =	61.5 mph (Exhibit 13-13)				S =	mph (Exhibit 13-13)			

RAMPS AND RAMP JUNCTIONS WORKSHEET									
<b>General Information</b>					<b>Site Information</b>				
Analyst	Kimley-Horn & Associates			Freeway/Dir of Travel	I-580 WB				
Agency or Company				Junction	I-580 and Corral Hollow Road				
Date Performed	8/14/2014			Jurisdiction					
Analysis Time Period	PM Peak			Analysis Year	Existing Plus Phase IA				
Project Description Tracy Hills Specific Plan									
<b>Inputs</b>									
Upstream Adj Ramp		Freeway Number of Lanes, N			2		Downstream Adj Ramp		
<input type="checkbox"/> Yes <input type="checkbox"/> On		Ramp Number of Lanes, N			1		<input type="checkbox"/> Yes <input type="checkbox"/> On		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		Acceleration Lane Length, L <sub>A</sub>					<input checked="" type="checkbox"/> No <input type="checkbox"/> Off		
L <sub>up</sub> = ft		Deceleration Lane Length L <sub>D</sub>			200		L <sub>down</sub> = ft		
V <sub>u</sub> = veh/h		Freeway Volume, V <sub>F</sub>			1199		V <sub>D</sub> = veh/h		
		Ramp Volume, V <sub>R</sub>			232				
		Freeway Free-Flow Speed, S <sub>FF</sub>			70.0				
		Ramp Free-Flow Speed, S <sub>FR</sub>			35.0				
<b>Conversion to pc/h Under Base Conditions</b>									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f <sub>HV</sub>	f <sub>p</sub>	v = V/PHF x f <sub>HV</sub> x f <sub>p</sub>	
Freeway	1199	0.92	Level	18	0	0.917	1.00	1421	
Ramp	232	0.93	Level	4	0	0.980	1.00	254	
UpStream									
DownStream									
<b>Merge Areas</b>					<b>Diverge Areas</b>				
<b>Estimation of v<sub>12</sub></b>					<b>Estimation of v<sub>12</sub></b>				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) L <sub>EQ</sub> = P <sub>FM</sub> = using Equation (Exhibit 13-6) V <sub>12</sub> = pc/h V <sub>3</sub> or V <sub>av34</sub> pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) L <sub>EQ</sub> = P <sub>FD</sub> = 1.000 using Equation (Exhibit 13-7) V <sub>12</sub> = 1421 pc/h V <sub>3</sub> or V <sub>av34</sub> 0 pc/h (Equation 13-14 or 13-17) Is V <sub>3</sub> or V <sub>av34</sub> > 2,700 pc/h? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is V <sub>3</sub> or V <sub>av34</sub> > 1.5 * V <sub>12</sub> /2 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, V <sub>12a</sub> = pc/h (Equation 13-16, 13-18, or 13-19)				
<b>Capacity Checks</b>					<b>Capacity Checks</b>				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V <sub>FO</sub>		Exhibit 13-8			V <sub>F</sub>	1421	Exhibit 13-8	4800	No
					V <sub>FO</sub> = V <sub>F</sub> - V <sub>R</sub>	1167	Exhibit 13-8	4800	No
					V <sub>R</sub>	254	Exhibit 13-10	2000	No
<b>Flow Entering Merge Influence Area</b>					<b>Flow Entering Diverge Influence Area</b>				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V <sub>R12</sub>		Exhibit 13-8			V <sub>12</sub>	1421	Exhibit 13-8 4400:All		No
<b>Level of Service Determination (if not F)</b>					<b>Level of Service Determination (if not F)</b>				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D <sub>R</sub> = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D <sub>R</sub> = 14.7 (pc/mi/ln) LOS = B (Exhibit 13-2)				
<b>Speed Determination</b>					<b>Speed Determination</b>				
M <sub>S</sub> = (Exhibit 13-11) S <sub>R</sub> = mph (Exhibit 13-11) S <sub>0</sub> = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D <sub>S</sub> = 0.451 (Exhibit 13-12) S <sub>R</sub> = 57.4 mph (Exhibit 13-12) S <sub>0</sub> = N/A mph (Exhibit 13-12) S = 57.4 mph (Exhibit 13-13)				