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**ALTERNATIVES ANALYSIS SUMMARY**

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## MEMORANDUM

Date: February 22, 2016  
To: Amy Lewin, Emma Belmont and Rachel Prelog  
From: Charlie Alexander, Carly Sieff and Andrew McFadden  
**Subject: Alternatives Analysis Materials for Technical Advisory Committee**

*DN15-0488*

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This technical memorandum summarizes alternatives analysis findings for the West Elizabeth Enhanced Travel Corridor Plan. Fehr & Peers studied the following design approaches as a part of the alternatives analysis:

- Tweak & Tune (transit improvements only)
- Transportation Systems Management
- Traffic Calming
- MAX on West Elizabeth

This technical memorandum includes:

- Design approach evaluation matrix
- MMLOS analysis
- Traffic operations analysis (existing and existing plus design approach analysis; 2040 is forthcoming)



## DESIGN APPROACH EVALUATION MATRIX

The following page includes the draft design approach evaluation matrix. This evaluation matrix builds upon the detailed performance measure analysis including multi-modal level of service. In general, the Tweak & Tune design approach only improves conditions for transit; therefore, this alternative still evaluates poorly for the other modes. The Transportation Systems Management evaluates significantly better than the Tweak & Tune design approach; however, many criteria are met at a medium level and some criteria are still only met at a low level. The Traffic Calming design approach improves upon the Transportation Systems Management design approach for all modes of transportation; however, this design approach may be less fiscally responsible than other design approaches and increases congestion for people driving. The MAX on West Elizabeth design approach evaluates similarly to the Traffic Calming design approach; however, this design meets some criteria at a "Low" level including congestion for people driving.

Design Approaches	Criteria (based on a low, medium, high, n/a ranking)													
	Multi-modal									Supports existing economic conditions	Beautiful, vibrant, and attractive public spaces	Well-connected	Fiscal responsibility	Community support
	High frequency transit	Reliable transit	Sufficient transit capacity	Convenient/efficient bicycling and walking	Bicyclist and pedestrian safety	Complete pedestrian network	Comfort for bicyclists	Vehicular safety	Vehicular efficiency and convenience					
<b>Tweak &amp; Tune Design Approach</b>														
People biking: do nothing				Low	Low		Low		High	Medium		Low	High	Low
People driving: do nothing					Low		Low	Low	Medium	Low	Low	Medium	High	Low
People riding transit: Adjust transit service routes, schedules and frequencies	Medium	Low	Medium						High	Medium	Medium	Low	High	Medium
People walking: do nothing				Low	Low	Low				Low	Low	Low	High	Low
<b>Transportation Systems Management (TSM) Design Approach</b>														
People biking: Complete bike lanes where missing, green bike lanes through intersections, two-stage turn queue boxes where appropriate				High	Medium		Medium		High	Medium		Medium	High	Low
People driving: Access control at key locations: between Shields Street & City Park Avenue, between Taft Hill Road and Hillcrest Drive					High		High	Medium	Medium	Medium	Low	Medium	High	Medium
People riding transit: Adjust transit service routes, schedules and frequencies (same as Tweak & Tune), basic bus stop treatments (shelters, benches, etc.), transit signal priority, transit station at CSU Equine Center	High	Medium	Medium						Medium	High	Medium	Medium	High	Medium
People walking: Complete sidewalk network to minimum ADA width, leading pedestrian intervals				High	High	Medium				Medium	Medium	Medium	High	Medium
<b>Traffic Calming Design Approach</b>														
People biking: One-way cycle tracks on West Elizabeth Street, green bike lanes through intersections, two-stage turn queue boxes where appropriate, pilot protected intersection at West Elizabeth Street/City Park Avenue				Medium	High		High		Low	High		High	Medium	High
People driving: Access control at key locations: between Shields Street & City Park Avenue, between Taft Hill Road and Hillcrest Drive, roundabouts at West Elizabeth Street/Overland Trail and West Elizabeth Street/Ponderosa Drive, dual eastbound left-turn lanes at West Elizabeth Street/Shields Street, medians where feasible					High		High	High	High	Medium	High	High	Medium	High
People riding transit: Implement BRT-style service with articulated buses and stations, transit signal priority, transit station at CSU Equine Center; transit service to focus along West Elizabeth-Constitution-Plum route	High	High	High						Medium	High	High	Medium	Medium	High
People walking: Complete sidewalk network with landscape separation where possible, leading pedestrian intervals				High	High	High				High	High	High	Medium	High
<b>MAX on West Elizabeth Design Approach</b>														
People biking: One-way cycle tracks on West Elizabeth Street, green bike lanes through intersections, two-stage turn queue boxes where appropriate				Medium	High		High		Low	High		High	Medium	High
People driving: Access control at key locations: between Shields Street & City Park Avenue, between Taft Hill Road and Hillcrest Drive, roundabouts at West Elizabeth Street/Overland Trail and West Elizabeth Street/Ponderosa Drive, dual eastbound left-turn lanes at West Elizabeth Street/Shields Street, medians where feasible					High		High	High	High	Medium	High	High	Medium	High
People riding transit: Implement BRT-style service with articulated buses and stations, transit signal priority, transit station at CSU Equine Center; transit service to focus along West Elizabeth route with bus only lanes	High	High	High						Medium	Low	High	Medium	Medium	Medium
People walking: Complete sidewalk network with landscape separation where possible, leading pedestrian intervals				High	High	High				High	High	High	Medium	High



## MMLOS ANALYSIS

The following pages include MMLOS analysis for each primary mode of transportation under each design approach: Transportation Systems Management, Traffic Calming and MAX on West Elizabeth design approaches. The Tweak & Tune MMLOS is the same as MMLOS for existing conditions.

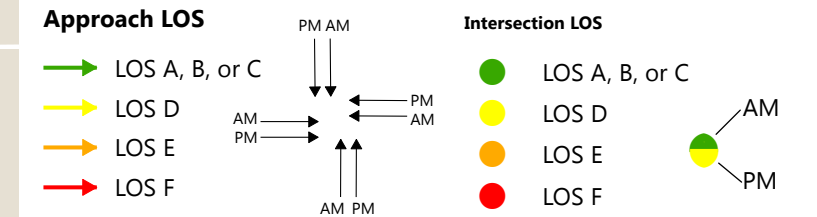
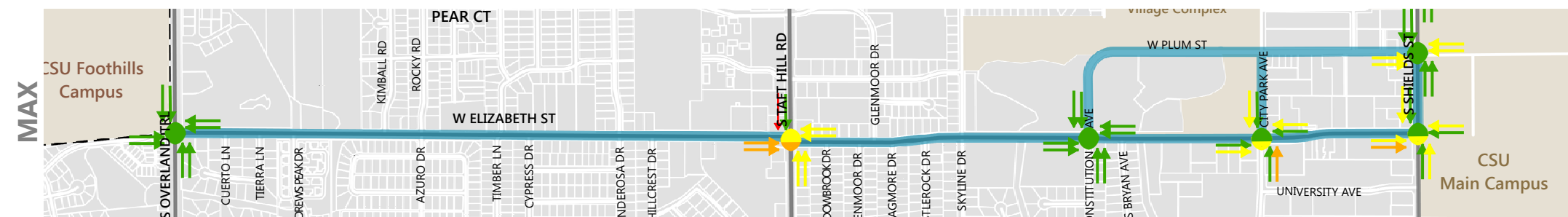
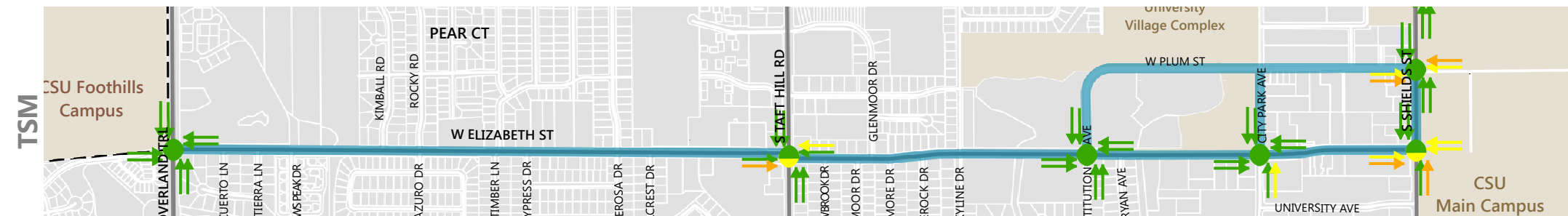
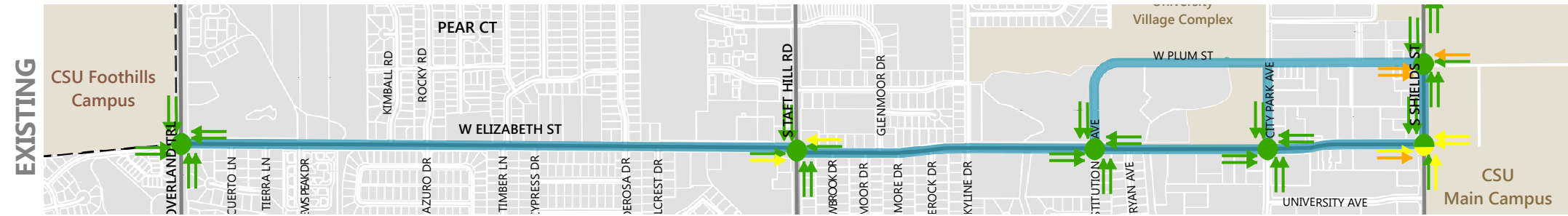
In general, the MMLOS for people riding transit, people bicycling and people walking improves for each design approach except for Tweak & Tune.

For people driving, the Transportation Systems Management design approach least affects overall intersection delay. The Traffic Calming and MAX on West Elizabeth design approaches generally increase vehicle delay, particularly at the West Elizabeth Street/Taft Hill Road and West Elizabeth Street/City Park Avenue intersections.

For people riding transit, each design approach comparably improves the MMLOS for transit according to this methodology; however, other considerations affect transit service quality for which this methodology does not have adequate sensitivities.

For people bicycling, the Transportation Systems Management results in a small level of improvement to LTS over the existing condition, particularly where existing missing bike lanes are added. The Traffic Calming and MAX on West Elizabeth design approaches substantially reduce bicyclist LTS on West Elizabeth Street.

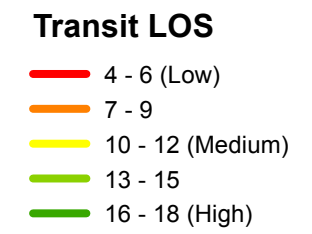
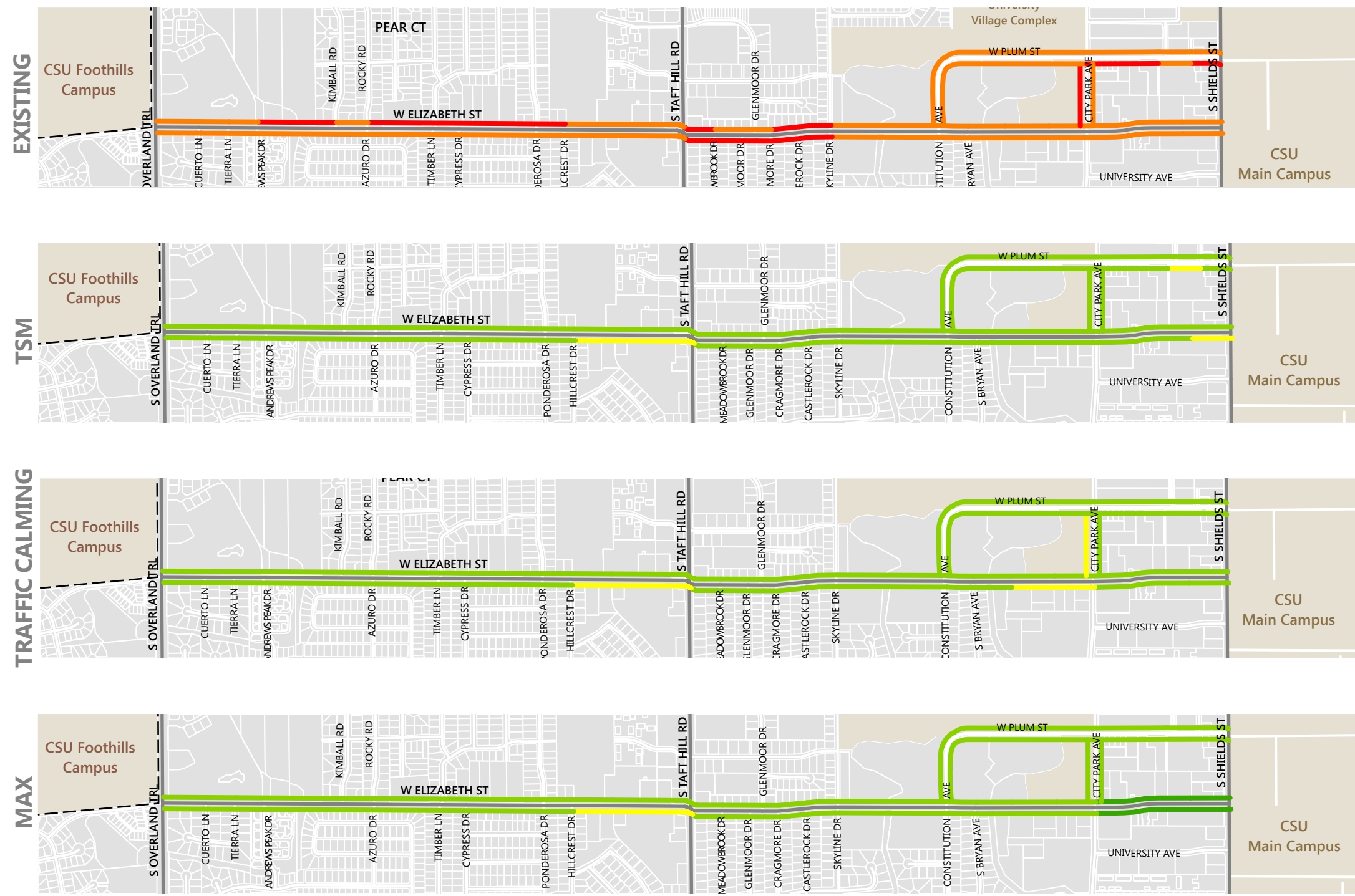
For people walking, the Transportation Systems Management results in a small level of improvement over the existing condition, particularly where sidewalks are added where they are currently missing or widened where they are currently very narrow. The Traffic Calming and MAX on West Elizabeth design approaches substantially improve conditions for pedestrians on West Elizabeth Street.



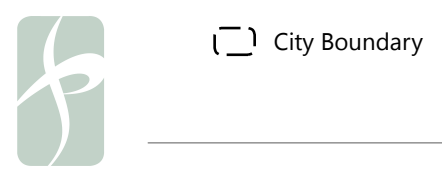
Performance for automobiles is based on approach level of service (LOS), which accounts for vehicle travel speed, and intersection level of service (LOS), which accounts for vehicle delay at intersections. Approach and intersection LOS are based on 2015 traffic volumes and HCM 2010 methodologies.

City Boundary  
West Elizabeth Street Study Corridor





The transit score is based on transit reliability (roadway LOS) and built environment factors including proximate walkways and bikeways and bus stop amenities.

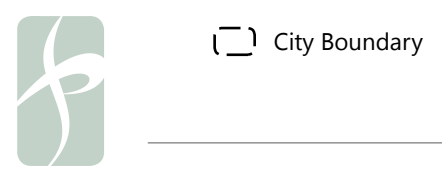




**Pedestrian LOS**

- 2 - 5 (Low)
- 6 - 7
- 8 - 10 (Medium)
- 11 - 12
- 13 - 15 (High)

The pedestrian score is based on sidewalk width, buffer width and distance to the nearest crossing.



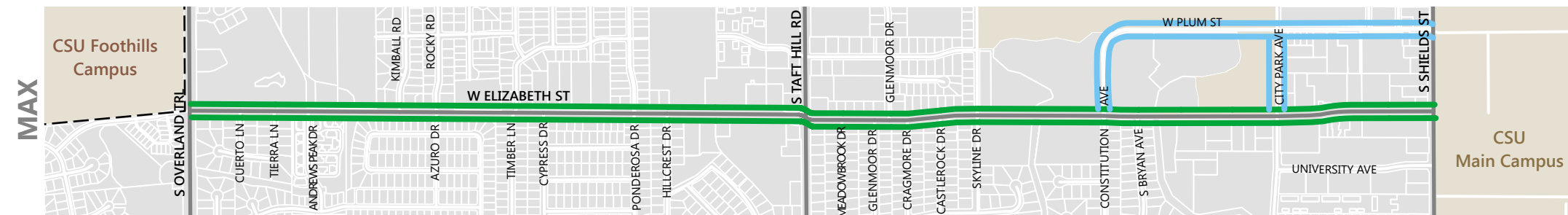
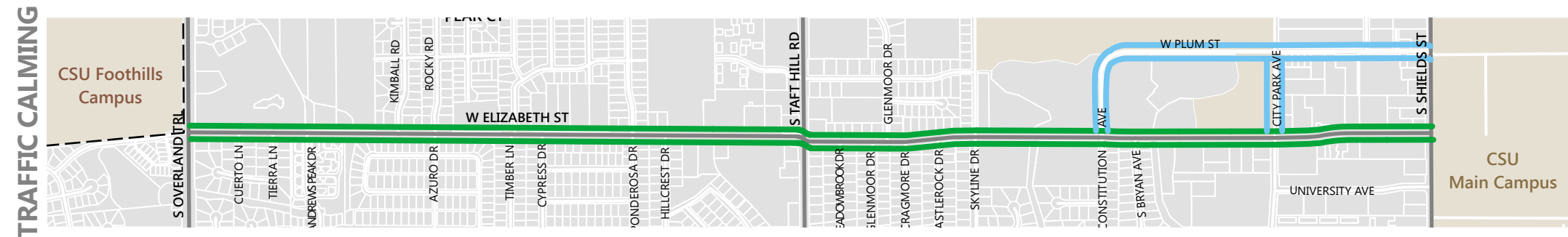
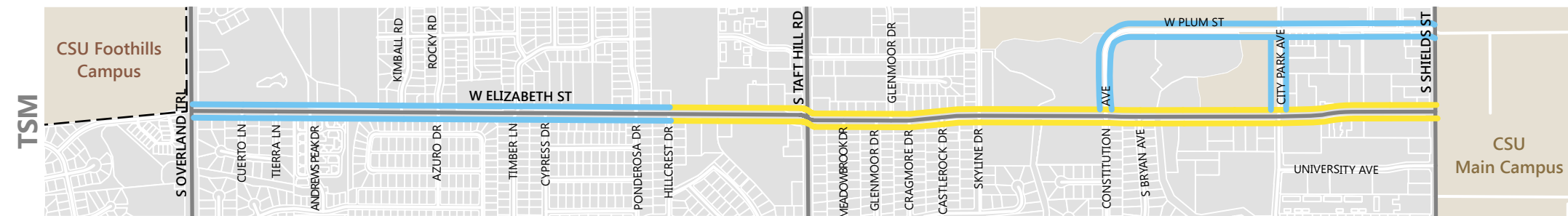




**Bicycle LTS**

- 5
- 4
- 3
- 2
- 1

LTS applies the same methodology that is used in the 2014 Bicycle Master Plan. The score from 1-5 represents the level of bicyclist comfort based on traffic volume, speed, number of lanes, and presence and quality of the bikeway.



City Boundary





## PEOPLE DRIVING

Table 1 shows the assumed changes to study intersections in each design approach. Table 2 shows the delay and Level of Service (LOS) by intersection for people driving for each design approach assuming existing traffic volumes; Table 3 shows the delay and LOS for people driving for each design approach assuming 2040 traffic volumes.



**TABLE 1: ASSUMED CHANGES BY DESIGN APPROACH**

Intersection	Existing / Tweak & Tune	Transportation Systems Management	Traffic Calming	MAX on West Elizabeth
West Elizabeth Street/Overland Trail	--	--	1. Replace side-street stop with roundabout	1. Replace side-street stop with roundabout
West Elizabeth Street/Taft Hill Road	--	1. Add TSP	1. Add TSP 2. Prohibit NB/SB RTOR (for two-stage turn queue boxes) 3. Add exclusive EB/WB cycle track phases 4. Protect EB/WB right-turns	1. Add TSP 2. Prohibit NB/SB RTOR (for two-stage turn queue boxes) 3. Add exclusive EB/WB cycle track phases 4. Protect EB/WB right-turns
West Elizabeth Street/Constitution Avenue	--	1. Add TSP 2. Prohibit NB/SB RTOR (for two-stage turn queue boxes)	1. Add TSP 2. Prohibit NB/SB RTOR (for two-stage turn queue boxes) 3. Protect EB/WB left-turns	1. Add TSP 2. Prohibit NB/SB RTOR (for two-stage turn queue boxes) 3. Protect EB/WB left-turns 4. Bus-only lanes
West Elizabeth Street/City Park Avenue	--	1. Prohibit NB/SB RTOR (for two-stage turn queue boxes)	1. Pilot protected intersection with protected EB/WB/NB/SB left-turns	1. Prohibit NB/SB RTOR (for two-stage turn queue boxes) 2. Protect EB/WB left-turns 3. Bus-only lanes
West Elizabeth Street/Shields Street	--	--	1. Prohibit EB/WB RTOR (for two-stage turn queue boxes) 2. Run EB cycle track and south crosswalk concurrently with P.6; reconfigure EB lanes to 2L, 1T/R, 1R and WB lanes to 1L, 1T, 1R	1. Prohibit EB/WB RTOR (for two-stage turn queue boxes) 2. Run EB cycle track and south crosswalk concurrently with P.6; reconfigure EB lanes to 2L, 1T/R, 1R and WB lanes to 1L, 1T, 1R
Shields Street/Plum Street	--	1. Add TSP	1. Add TSP	1. Add TSP
Shields Street/Laurel Street	--	--	--	--
Shields Street/Lake Street	--	--	--	--
Shields Street/Prospect Road	--	--	--	--



**TABLE 2: DELAY / LEVEL OF SERVICE – EXISTING TRAFFIC VOLUMES**

Intersection	Existing / Tweak & Tune		Transportation Systems Management		Traffic Calming		MAX on West Elizabeth	
	AM	PM	AM	PM	AM	PM	AM	PM
West Elizabeth Street/Overland Trail (side street stop in Existing and Tweak & Tune; roundabout in Traffic Calming and MAX on West Elizabeth)	3 / A 22 / C (WBL)	3 / A 30 / D (WBL)	4 / A 18 / C (WBL)	4 / A 29 / D (WBL)	4 / A	6 / A	5 / A	6 / A
West Elizabeth Street/Taft Hill Road	21 / C	36 / D	21 / C	37 / D	43 / D	<b>62 / E</b>	44 / D	<b>65 / E</b>
West Elizabeth Street/Constitution Avenue	6 / A	9 / A	7 / A	10 / A	12 / B	25 / C	10 / B	19 / B
West Elizabeth Street/City Park Avenue	8 / A	15 / B	8 / A	17 / B	17 / B	42 / D	19 / B	47 / D
West Elizabeth Street/Shields Street	18 / B	46 / D	17 / B	47 / D	22 / C	42 / D	22 / C	48 / D
Shields Street/Plum Street	9 / A	14 / B	9 / A	14 / B	8 / A	16 / B	8 / A	16 / B
Shields Street/Laurel Street	12 / B	25 / C	12 / B	26 / C	12 / B	28 / C	11 / B	29 / C
Shields Street/Lake Street	8 / A	11 / B	7 / A	10 / B	9 / A	12 / B	9 / A	11 / B
Shields Street/Prospect Road	<b>61 / E</b>	46 / D	<b>57 / E</b>	47 / D	49 / D	46 / D	50 / D	47 / D



**TABLE 3: DELAY / LEVEL OF SERVICE – 2040 TRAFFIC VOLUMES**

Intersection	No Build / Tweak & Tune		Transportation Systems Management		Traffic Calming		MAX on West Elizabeth	
	AM	PM	AM	PM	AM	PM	AM	PM
West Elizabeth Street/Overland Trail (side street stop in Existing and Tweak & Tune; roundabout in Traffic Calming and MAX on West Elizabeth)	3 / A 25 / D (WBL)	4 / A 29 / D (WBL)	5 / A 62 / F (WBT)	4 / A 32 / D (WBL)	6 / A	8 / A	7 / A	8 / A
West Elizabeth Street/Taft Hill Road	33 / C	<b>58 / E</b>	30 / C	53 / D	<b>94 / F</b>	<b>93 / F</b>	<b>97 / F</b>	<b>106 / F</b>
West Elizabeth Street/Constitution Avenue	6 / A	11 / B	7 / A	11 / A	14 / B	35 / D	12 / B	24 / C
West Elizabeth Street/City Park Avenue	8 / A	23 / C	8 / A	32 / C	16 / B	<b>58 / E</b>	21 / C	<b>83 / F</b>
West Elizabeth Street/Shields Street	22 / C	<b>103 / F</b>	23 / C	<b>115 / F</b>	26 / C	<b>114 / F</b>	25 / C	<b>115 / F</b>
Shields Street/Plum Street	10 / B	47 / D	10 / B	37 / D	8 / A	51 / D	8 / A	45 / D
Shields Street/Laurel Street	14 / B	<b>97 / F</b>	14 / B	<b>98 / F</b>	14 / B	<b>114 / F</b>	14 / B	<b>112 / F</b>
Shields Street/Lake Street	10 / A	<b>80 / E</b>	9 / A	<b>79 / E</b>	11 / B	<b>57 / E</b>	10 / B	55 / D
Shields Street/Prospect Road	<b>135 / F</b>	<b>81 / F</b>	<b>141 / F</b>	<b>106 / F</b>	<b>141 / F</b>	<b>71 / E</b>	<b>144 / F</b>	<b>70 / E</b>



Notable findings from the vehicle level of service analysis are:

- At the West Elizabeth Street/Overland Trail intersection, replacing the existing side-street stop with a roundabout in the Traffic Calming and MAX on West Elizabeth design approaches results in LOS A during both peak hours. The roundabout reduces delay for eastbound and westbound drivers and maintains LOS A for all approaches.
- At the West Elizabeth Street/Taft Hill Road intersection:
  - The addition of Transit Signal Priority (TSP) in the Transportation Systems Management design approach reduces delay for eastbound-westbound transit without significantly affecting overall intersection operations.
  - The addition of exclusive eastbound-westbound cycle track phases in the Traffic Calming and MAX on West Elizabeth design approaches increases overall intersection delay and causes the intersection to operate at LOS E during the PM peak hour. *The exclusive eastbound-westbound cycle track phases, and potential alternatives that would have lesser effect on intersection operations, should be further assessed as a part of the Recommended Design Refinement.*
- At the West Elizabeth Street/Constitution Avenue intersection, modifications in each of the design approaches results in LOS C or better operations during both peak hours.
- At the West Elizabeth Street/City Park Avenue intersection:
  - The addition of a protected intersection in the Traffic Calming design approach, with protected left-turns on all approaches, increases the overall intersection delay and causes the intersection to operate at LOS D during the PM peak hour. *The protected intersection concept needs to be further assessed as a part of the Recommended Design Refinement.*
  - In the MAX on West Elizabeth design approach, the addition of Transit Signal Priority, protected eastbound/westbound left-turns, no right-turn on red on the northbound/southbound approaches and bus only lanes causes the intersection to operate at LOS D during the PM peak hour.
- At the West Elizabeth Street/Shields Street intersection, the proposed lane configuration and operational changes in the Traffic Calming and MAX on West Elizabeth design approaches which run the eastbound cycle track, the north crosswalk and the south crosswalk concurrently with Phase 6 (westbound), do not significantly change overall intersection delay and level of service from the existing condition. *These proposed changes*



*need to be further assessed, in addition to other candidate improvements already being proposed by the City, as a part of the Recommended Design Refinement.*

- At Shields Street/Plum Street, the addition of Transit Signal Priority (TSP) in each of the design approaches does not significantly change overall delay or LOS.

To obtain 2040 volumes growth rates were obtained from the NFR travel model and were synthesized to obtain growth rates along West Elizabeth Street for the AM (23%) and PM (13%) peak hours and along Shields Street for the AM (18%) and PM (21%) peak hours. A second westbound left turn lane is added to the Shields Street/Mulberry Street intersection and an exclusive westbound right turn bay is added at the intersection of Shields Street/Prospect Road to allow the anticipated growth in traffic to access the study intersections. Prior to the improvements huge queues were seen on these approaches that restricted access to other study intersections.

Notable findings from the 2040 vehicle level of service analysis are:

- In the AM peak hour significant increases in overall intersection delay compared to existing conditions can be seen at West Elizabeth Street/Taft Hill Road and Shields Street/Prospect Road in all scenarios:
  - At West Elizabeth Street/Taft Hill Road delay increases are mainly seen on the eastbound and northbound approaches
  - At Shields Street/Prospect Road delay increases are mainly seen on the eastbound approach.
- In the PM peak hour no build conditions significant increases in delay can be seen at all study intersections along Shields Street and at the West Elizabeth Street/Taft Hill Road intersection with an overall intersection LOS E
  - This delay is spread to lower conflicting volume intersections due to long queues spilling out of turn pockets inhibiting adjacent movements
- The PM Traffic Calming alternative sees similar increases in delay from existing conditions along Shields Street and increased delay at City Park Avenue, Constitution Avenue, and Taft Hill Road over no build conditions similar to that seen under existing conditions volumes. This increased delay results in one to two intersection LOS levels higher in the Traffic Calming alternative compared to the no build conditions.
- The PM MAX alternative intersection operations results are generally consistent with the Traffic Calming alternative except at the West Elizabeth/City Park Avenue intersection where the MAX alternative's delay is significantly higher due to use of 1 eastbound-



- westbound through travel lane. Intersection delay discrepancies between the MAX and Traffic Calming alternatives at the West Elizabeth Street/Taft Hill Road and West Elizabeth Street/Constitution Avenue intersections are largely balanced out when taken collectively.
- At the West Elizabeth Street/Shields Street intersection large delay increases are seen in the Transportation Systems Management approach compared to the no build approach for the northbound and eastbound approaches. These increases are largely due to the addition of the LPI at the intersection and southbound delay reductions due to improved southbound progression from changes made at the Shields Street/Plum Street intersection.

Table 4 and Table 5 show vehicle travel times between Overland Trail and Shields Street for each design approach. Table 6 shows person delay for people driving for each design approach.





**TABLE 4: VEHICLE TRAVEL TIMES – AM PEAK HOUR**

Segment		Existing / Tweak & Tune	Transportation Systems Management	Traffic Calming	MAX on West Elizabeth
Eastbound	Overland Trail to Ponderosa	85	85	87	87
	Ponderosa to Taft Hill	70	70	67	70
	Taft Hill to Constitution	59	60	61	62
	Constitution to City Park	37	36	42	45
	City Park to Shields	68	70	80	84
	<b>Total</b>	<b>319</b>	<b>321</b>	<b>337</b>	<b>347</b>
Westbound	Shields to City Park	36	36	41	43
	City Park to Constitution	37	39	41	40
	Constitution to Taft Hill	92	96	90	90
	Taft Hill to Ponderosa	36	37	40	40
	Ponderosa to Overland Trail	107	111	100	100
	<b>Total</b>	<b>309</b>	<b>318</b>	<b>312</b>	<b>313</b>



**TABLE 5: VEHICLE TRAVEL TIMES – PM PEAK HOUR**

Segment		Existing / Tweak & Tune	Transportation Systems Management	Traffic Calming	MAX on West Elizabeth
Eastbound	Overland Trail to Ponderosa	84	85	86	86
	Ponderosa to Taft Hill	76	76	69	70
	Taft Hill to Constitution	62	61	69	69
	Constitution to City Park	39	39	61	64
	City Park to Shields	92	103	80	108
	<b>Total</b>	<b>352</b>	<b>365</b>	<b>365</b>	<b>397</b>
Westbound	Shields to City Park	40	40	46	69
	City Park to Constitution	41	43	59	51
	Constitution to Taft Hill	101	104	97	94
	Taft Hill to Ponderosa	39	40	43	43
	Ponderosa to Overland Trail	108	109	98	98
	<b>Total</b>	<b>329</b>	<b>337</b>	<b>343</b>	<b>356</b>



**TABLE 6: PERSON DELAY FOR PEOPLE DRIVING**

Intersection	AM Peak Hour				PM Peak Hour			
	Existing / Tweak & Tune	TSM	Traffic Calming	MAX on West Elizabeth	Existing / Tweak & Tune	TSM	Traffic Calming	MAX on West Elizabeth
West Elizabeth Street/Overland Trail	50	57	79	83	67	72	119	125
West Elizabeth Street/Taft Hill Road	913	898	1,775	1,798	1,910	2,014	3,171	3,323
West Elizabeth Street/Constitution Avenue	79	95	160	135	232	265	640	502
West Elizabeth Street/City Park Avenue	141	134	297	322	553	549	1,377	1,536
West Elizabeth Street/Shields Street	762	758	962	997	3,096	2,874	2,669	3,148
Shields Street/Plum Street	290	312	259	264	754	798	958	956
Shields Street/Laurel Street	377	394	453	368	1,358	1,413	1,540	1,551
Shields Street/Lake Street	289	299	365	377	588	526	605	584
Shields Street/Prospect Road	3,626	3,395	2,966	3,039	3,620	3,656	3,583	3,652
<b>Sum</b>	<b>6,528</b>	<b>6,343</b>	<b>7,316</b>	<b>7,384</b>	<b>12,178</b>	<b>12,166</b>	<b>14,661</b>	<b>15,377</b>



Notable findings from the vehicle travel time analysis and person delay analysis for people driving are:

- The maximum increase to vehicle travel times in either peak hour or direction is 45 seconds in the eastbound direction during the PM peak hour. This represents approximately 13 percent of the existing eastbound travel time during the PM Peak hour.
- Overall, the TSM, Traffic Calming and MAX on West Elizabeth design approaches increase east-west travel time on West Elizabeth Street.
- In the AM peak hour, travel times increase in the eastbound direction with the implementation of any design approach. In the AM peak hour westbound travel times remain relatively unchanged in any design approach, likely due to the relatively light westbound traffic volumes in the AM peak hour.
- In the AM peak hour in the eastbound direction, the greatest increases in travel time are between Constitution Drive and City Park Avenue in the Traffic Calming and MAX on West Elizabeth design approaches, likely due to changes at the West Elizabeth Street/City Park Avenue intersection.
- In the AM Peak hour in the eastbound direction between City Park Avenue and Shields Street, the MAX on West Elizabeth Street design approach most significantly increases travel time, likely due to the conversion of the existing travel lanes to bus only lanes.
- In the PM peak hour, the TSM and Traffic Calming design approaches increase east-west travel time by a comparable amount (13 seconds for both design approaches in the eastbound direction peak hour, 8 seconds for the TSM design approach in the westbound direction and 14 seconds for the Traffic Calming design approach in the westbound direction).
- In the PM peak hour in the eastbound direction, the most significant increases in travel time are observed in the Traffic Calming and MAX on West Elizabeth design approaches between Constitution Drive and City Park Avenue, likely due to changes at the West Elizabeth Street/City Park Avenue intersection which add delay for east-west drivers. Increased travel times are also observed on this segment in the westbound direction.
- In the PM peak hour between City Park Avenue and Shields Street the MAX on West Elizabeth design approach's increase to eastbound and westbound travel times are likely due to the conversion of the outside travel lanes to bus-only lanes.
- Overall, the TSM design approach does not significantly affect overall delay for people driving. The Traffic Calming design approach increases overall person delay for people



driving by 12 percent in the AM peak hour and 20 percent in the PM peak hour. The MAX on West Elizabeth design approach increases overall person delay for people driving by 13 percent in the AM peak hour and 26 percent in the PM peak hour.



## PEOPLE RIDING TRANSIT

Table 7 shows average transit vehicle delay by intersection for each design approach. Table 8 shows person delay for people riding transit for each design approach.

Notable findings from the transit vehicle delay analysis and person delay analysis for people riding transit are:

- Overall, transit vehicle delay by intersection is difficult to measure accurately between design approaches given the relatively low number of buses on the corridor in any of the alternatives. Additionally, the routing of buses changes between design approaches. As such, there may be variation in alternatives that is not directly explained by infrastructure changes included in a particular design approach.
- In the Traffic Calming and MAX on West Elizabeth design approaches, the benefit of Transit Signal Priority can be seen at the West Elizabeth Street/Taft Hill Road and Shields Street/Plume Street intersections, where eastbound-westbound delay for buses generally decreases.
- Compared to Existing Conditions, each of the design approaches generally reduces overall person delay for people riding transit. The Traffic Calming design approach most significantly reduces overall person delay for people riding transit.



**TABLE 7: TRANSIT VEHICLE DELAY BY INTERSECTION**

Intersection	Existing / Tweak & Tune		Transportation Systems Management		Traffic Calming		MAX on West Elizabeth	
	AM	PM	AM	PM	AM	PM	AM	PM
West Elizabeth Street/Overland Trail	29	26	53	14	11	17	10	15
West Elizabeth Street/Taft Hill Road	60 EB – 87 WB – 47	80 EB – 83 WB – 70	76 EB – 88 WB – 56	72 EB – 81 WB – 81	52 EB – 69 WB – 47	60 EB – 72 WB – 62	55 EB – 72 WB – 65	57 EB – 84 WB – 59
West Elizabeth Street/Constitution Avenue	17 EB – 29 WB – 10	24 EB – 18 WB – 17	19 EB – 24 WB – 11	34 EB – 39 WB – 18	22 EB – 41 WB – 13	26 EB – 44 WB – 24	20 EB – 30 WB – 14	31 EB – 45 WB – 19
West Elizabeth Street/City Park Avenue	24 EB – 20 WB – 13	50 EB – 30 WB – 15	30	75	26	47	22	37
West Elizabeth Street/Shields Street	32 EB – 47	41 EB – 59	28	52	35	42	24 EB – 67	44 EB – 96
Shields Street/Plum Street	44 EB – 69 WB – 57	61 EB – 107 WB – 81	57 EB – 80 WB – 58	73 EB – 90 WB – 90	43 EB – 63 WB – 50	60 EB – 95 WB – 65	49 EB – 64 WB – 61	63 EB – 89 WB – 73
Shields Street/Laurel Street	35	66	35	59	35	66	34	68
Shields Street/Lake Street	4	11	3	11	4	14	4	12
Shields Street/Prospect Road	33	13	36	11	30	14	29	11



**TABLE 8: PERSON DELAY FOR PEOPLE RIDING TRANSIT**

Intersection	AM Peak Hour				PM Peak Hour			
	Existing / Tweak & Tune	TSM	Traffic Calming	MAX on West Elizabeth	Existing / Tweak & Tune	TSM	Traffic Calming	MAX on West Elizabeth
West Elizabeth Street/Overland Trail	5	5	1	1	15	1	1	1
West Elizabeth Street/Taft Hill Road	67	69	59	64	104	115	96	97
West Elizabeth Street/Constitution Avenue	32	29	45	36	70	71	50	53
West Elizabeth Street/City Park Avenue	37	20	16	35	132	113	72	81
West Elizabeth Street/Shields Street	60	18	22	78	20	6	5	66
Shields Street/Plum Street	164	178	140	146	338	382	298	320
Shields Street/Laurel Street	4	4	4	4	30	27	30	31
Shields Street/Lake Street	1	0	1	1	5	5	7	6
Shields Street/Prospect Road	121	122	53	52	26	25	26	29
<b>Sum</b>	<b>490</b>	<b>445</b>	<b>342</b>	<b>416</b>	<b>740</b>	<b>745</b>	<b>585</b>	<b>682</b>





## PEOPLE BICYCLING

Table 9 shows bicyclist delay and LOS by intersection for each design approach. Table 10 shows person delay for people bicycling for each design approach.

Notable findings from the bicyclist delay analysis and person delay analysis for people bicycling are:

- The introduction of protected phases for the protected bike lane crossings at Taft Hill Road and Shields Street generally increase delay for bicyclists; these changes are observed in the Traffic Calming and the MAX on West Elizabeth design approaches at Taft Hill Road in both peak hours and at Shields Street in the AM peak hour.
- At the West Elizabeth Street/City Park Avenue intersection the addition of the protected intersection moderately increases bicyclist delay by six seconds in both the AM and PM peak hours.
- Overall, the design approaches increase person delay for people bicycling.



**TABLE 9: BICYCLIST DELAY / LEVEL OF SERVICE**

Intersection	Existing / Tweak & Tune		Transportation Systems Management		Traffic Calming		MAX on West Elizabeth	
	AM	PM	AM	PM	AM	PM	AM	PM
West Elizabeth Street/Overland Trail	1 / A 4 / A (WBT)	1 / A 5 / A (WBL)	2 / A 7 / A (WBT)	1 / A 6 / A (WBL)	1 / A	3 / A	1 / A	2 / A
West Elizabeth Street/Taft Hill Road	30 / C	37 / D	28 / C	32 / D	36 / D	39 / D	34 / D	39 / D
West Elizabeth Street/Constitution Avenue	11 / B	9 / A	11 / B	11 / B	10 / B	13 / B	9 / A	15 / B
West Elizabeth Street/City Park Avenue	11 / B	14 / B	11 / B	14 / B	17 / B	20 / C	18 / B	36 / D
West Elizabeth Street/Shields Street	35 / D	39 / D	37 / D	<b>44 / E</b>	<b>47 / E</b>	39 / D	<b>47 / E</b>	40 / D
Shields Street/Plum Street	35 / D	<b>40 / E</b>	34 / D	<b>41 / E</b>	28 / C	<b>41 / E</b>	28 / C	<b>41 / E</b>
Shields Street/Laurel Street	14 / B	19 / B	15 / B	24 / C	17 / B	26 / C	17 / B	25 / C
Shields Street/Lake Street	5 / A	19 / B	6 / A	20 / C	7 / A	18 / B	7 / A	18 / B
Shields Street/Prospect Road	29 / C	33 / D	31 / D	32 / D	29 / C	33 / D	26 / C	29 / C



**TABLE 10: PERSON DELAY FOR PEOPLE BICYCLING**

Intersection	AM Peak Hour				PM Peak Hour			
	Existing / Tweak & Tune	TSM	Traffic Calming	MAX on West Elizabeth	Existing / Tweak & Tune	TSM	Traffic Calming	MAX on West Elizabeth
West Elizabeth Street/Overland Trail	0	0	0	0	1	1	4	2
West Elizabeth Street/Taft Hill Road	34	32	40	40	59	54	62	61
West Elizabeth Street/Constitution Avenue	12	13	11	10	20	25	27	33
West Elizabeth Street/City Park Avenue	24	25	30	36	36	36	51	103
West Elizabeth Street/Shields Street	91	94	125	124	87	97	85	86
Shields Street/Plum Street	100	98	79	79	109	110	112	112
Shields Street/Laurel Street	9	9	10	9	7	8	9	8
Shields Street/Lake Street	8	8	10	8	8	8	9	7
Shields Street/Prospect Road	40	43	40	39	29	27	30	23
<b>Sum</b>	<b>318</b>	<b>321</b>	<b>346</b>	<b>345</b>	<b>356</b>	<b>367</b>	<b>388</b>	<b>436</b>



## PEOPLE WALKING

Table 11 shows pedestrian delay and LOS by intersection for each design approach. Table 10 shows person delay for people walking for each design approach.

Notable findings from the pedestrian delay analysis and person delay analysis for people walking are:

- Many study intersections already operate at LOS E or LOS F for pedestrians during either the AM or PM peak hour and would continue to do so with implementation of any of the proposed design approaches.
- The Traffic Calming and MAX on West Elizabeth design approaches significantly increase pedestrian delay during both the AM and PM peak hours due to the introduction of protected left-turn phases that increase cycle length but reduce potential for vehicle/pedestrian conflicts.
- The TSM design approach does not significantly increase overall person delay for people walking. Both the Traffic Calming and MAX on West Elizabeth design approaches increase overall person delay, generally due to the introduction of protected turn phases that increase cycle lengths or increased congestion that increases split times between high-volume pedestrian crossing phases.



**TABLE 11: PEDESTRIAN DELAY / LEVEL OF SERVICE**

Intersection	Existing / Tweak & Tune		Transportation Systems Management		Traffic Calming		MAX on West Elizabeth	
	AM	PM	AM	PM	AM	PM	AM	PM
West Elizabeth Street/Overland Trail	0 / A	0 / A	0 / A	1 / A	0 / A	0 / A	0 / A	1 / A
West Elizabeth Street/Taft Hill Road	35 / D	<b>49 / E</b>	38 / D	<b>51 / E</b>	34 / D	<b>42 / E</b>	35 / D	<b>41 / E</b>
West Elizabeth Street/Constitution Avenue	18 / B	21 / C	22 / C	24 / C	19 / B	23 / C	16 / B	23 / C
West Elizabeth Street/City Park Avenue	20 / C	31 / D	22 / C	30 / D	33 / D	<b>57 / E</b>	35 / D	<b>59 / E</b>
West Elizabeth Street/Shields Street	<b>53 / E</b>	<b>57 / E</b>	<b>51 / E</b>	<b>57 / E</b>	<b>53 / E</b>	<b>55 / E</b>	<b>49 / E</b>	<b>56 / E</b>
Shields Street/Plum Street	<b>51 / E</b>	<b>59 / E</b>	<b>51 / E</b>	<b>57 / E</b>	<b>51 / E</b>	<b>58 / E</b>	<b>51 / E</b>	<b>56 / E</b>
Shields Street/Laurel Street	<b>46 / E</b>	<b>59 / E</b>	<b>48 / E</b>	<b>59 / E</b>	<b>47 / E</b>	<b>57 / E</b>	<b>49 / E</b>	<b>58 / E</b>
Shields Street/Lake Street	<b>50 / E</b>	<b>44 / E</b>	<b>50 / E</b>	<b>46 / E</b>	<b>46 / E</b>	<b>43 / E</b>	<b>47 / E</b>	<b>42 / E</b>
Shields Street/Prospect Road	<b>54 / E</b>	<b>67 / F</b>	<b>53 / E</b>	<b>68 / F</b>	<b>70 / F</b>	<b>64 / F</b>	<b>68 / F</b>	<b>64 / F</b>



**TABLE 12: PERSON DELAY FOR PEOPLE WALKING**

Intersection	AM Peak Hour				PM Peak Hour			
	Existing / Tweak & Tune	TSM	Traffic Calming	MAX on West Elizabeth	Existing / Tweak & Tune	TSM	Traffic Calming	MAX on West Elizabeth
West Elizabeth Street/Overland Trail	-	-	-	-	-	-	-	-
West Elizabeth Street/Taft Hill Road	9	10	9	9	43	44	35	35
West Elizabeth Street/Constitution Avenue	3	3	3	2	14	16	15	15
West Elizabeth Street/City Park Avenue	12	13	19	21	127	122	233	242
West Elizabeth Street/Shields Street	77	73	77	70	155	158	149	149
Shields Street/Plum Street	87	89	87	88	151	150	148	141
Shields Street/Laurel Street	26	26	29	30	61	61	59	60
Shields Street/Lake Street	46	47	42	42	18	19	18	17
Shields Street/Prospect Road	60	58	81	78	83	82	78	77
<b>Sum</b>	<b>319</b>	<b>321</b>	<b>348</b>	<b>341</b>	<b>652</b>	<b>652</b>	<b>735</b>	<b>737</b>



Detailed technical analysis results are provided in an attached appendix.

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
Existing  
AM Peak Hour

**Intersection 2**                      **Shields St/W Laurel St**                      **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn							
	Through	719	707	98.3%	3.6	0.8	A	47
	Right Turn	413	395	95.6%	5.2	1.2	A	38
	Subtotal	1,132	1,101	97.3%	4.2	0.8	A	85
SB	Left Turn	130	129	98.8%	20.9	2.7	C	49
	Through	667	670	100.4%	10.4	1.4	B	127
	Right Turn							
	Subtotal	797	798	100.2%	12.2	1.4	B	177
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	128	121	94.3%	46.9	2.5	D	104
	Through							
	Right Turn	61	61	100.2%	10.1	2.5	B	11
	Subtotal	189	182	96.2%	35.3	2.6	D	115
<b>Total</b>		<b>2,118</b>	<b>2,081</b>	<b>98.3%</b>	<b>11.5</b>	<b>0.6</b>	<b>B</b>	<b>377</b>

**Intersection 3**                      **Shields St/W Plum St**                      **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	13	13	96.9%	6.1	7.5	A	1
	Through	1,064	1,039	97.6%	2.6	1.0	A	50
	Right Turn	37	40	108.9%	2.6	1.5	A	2
	Subtotal	1,114	1,091	98.0%	2.7	1.0	A	53
SB	Left Turn	13	14	103.8%	17.8	14.4	B	4
	Through	764	761	99.6%	5.4	0.8	A	75
	Right Turn	18	18	98.3%	5.6	2.7	A	2
	Subtotal	795	792	99.7%	5.7	0.7	A	81
EB	Left Turn	51	51	100.0%	54.3	9.9	D	51
	Through	25	31	124.4%	59.0	6.4	E	34
	Right Turn	34	34	100.3%	50.8	15.8	D	32
	Subtotal	110	116	105.6%	55.1	7.8	E	116
WB	Left Turn	17	18	105.9%	49.8	24.2	D	16
	Through	18	27	149.4%	42.4	11.6	D	21
	Right Turn	17	16	93.5%	7.9	3.1	A	2
	Subtotal	52	61	116.9%	36.1	10.6	D	40
<b>Total</b>		<b>2,071</b>	<b>2,061</b>	<b>99.5%</b>	<b>8.9</b>	<b>0.7</b>	<b>A</b>	<b>290</b>

**Intersection 4**                      **Shields St/W Elizabeth St**                      **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	140	143	102.4%	24.1	6.9	C	63
	Through	851	827	97.1%	10.9	2.3	B	166
	Right Turn	54	55	101.3%	8.6	1.5	A	9
	Subtotal	1,045	1,025	98.1%	12.6	2.5	B	238
SB	Left Turn	24	23	95.8%	34.1	18.1	C	14
	Through	653	651	99.6%	7.3	1.7	A	87
	Right Turn	138	139	100.9%	2.9	0.4	A	7
	Subtotal	815	813	99.8%	7.5	1.3	A	109
EB	Left Turn	258	262	101.4%	41.9	5.4	D	201
	Through	27	26	95.9%	44.1	18.3	D	21
	Right Turn	296	297	100.2%	32.9	12.1	C	179
	Subtotal	581	584	100.5%	37.8	5.6	D	400
WB	Left Turn	15	13	88.7%	50.4	31.5	D	12
	Through	5	5	108.0%	21.4	25.8	C	2
	Right Turn	5	4	84.0%	10.1	21.5	B	1
	Subtotal	25	23	91.6%	40.7	22.2	D	15
<b>Total</b>		<b>2,466</b>	<b>2,445</b>	<b>99.1%</b>	<b>17.4</b>	<b>2.0</b>	<b>B</b>	<b>762</b>



# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
Existing  
AM Peak Hour

Intersection 5		Shields St/Lake St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn							
	Through	1,178	1,171	99.4%	2.9	0.8	A	63
	Right Turn	154	151	98.0%	3.8	1.1	A	11
	Subtotal	1,332	1,322	99.2%	3.0	0.8	A	73
SB	Left Turn	123	120	97.6%	36.1	12.7	D	80
	Through	768	756	98.4%	5.6	1.6	A	78
	Right Turn							
	Subtotal	891	876	98.3%	10.2	3.7	B	158
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	61	60	99.0%	49.5	8.6	D	55
	Through							
	Right Turn	37	36	98.4%	4.9	1.0	A	3
	Subtotal	98	97	98.8%	32.4	5.4	C	58
Total		2,321	2,294	98.8%	7.5	1.8	A	289

Intersection 6		Shields St/Prospect			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	56	55	98.9%	26.4	5.0	C	27
	Through	946	942	99.6%	20.7	2.9	C	357
	Right Turn	136	130	95.2%	15.8	1.9	B	38
	Subtotal	1,138	1,127	99.0%	20.4	2.6	C	422
SB	Left Turn	145	155	107.2%	33.7	5.2	C	96
	Through	630	606	96.2%	6.6	1.2	A	73
	Right Turn	54	53	97.8%	2.6	0.9	A	3
	Subtotal	829	815	98.3%	11.6	1.4	B	171
EB	Left Turn	241	228	94.8%	154.2	42.7	F	646
	Through	713	732	102.6%	132.7	36.7	F	1,780
	Right Turn	152	151	99.5%	95.9	34.1	F	266
	Subtotal	1,106	1,112	100.5%	132.4	36.8	F	2,692
WB	Left Turn	71	66	92.4%	52.1	8.7	D	63
	Through	233	242	103.7%	41.6	3.4	D	184
	Right Turn	145	149	102.6%	34.4	5.1	C	94
	Subtotal	449	456	101.6%	40.8	2.9	D	341
Total		3,522	3,509	99.6%	60.5	13.5	E	3,626

Intersection 8		City Park Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	24	23	95.8%	21.6	3.5	C	9
	Through	33	31	94.2%	19.3	5.8	B	11
	Right Turn	35	36	101.4%	10.2	4.0	B	7
	Subtotal	92	90	97.4%	16.2	3.9	B	27
SB	Left Turn	34	33	95.9%	19.8	6.1	B	12
	Through	32	33	103.4%	19.1	7.1	B	12
	Right Turn	18	23	128.9%	11.9	3.9	B	5
	Subtotal	84	89	105.8%	17.2	4.4	B	28
EB	Left Turn	53	51	96.8%	9.3	4.3	A	9
	Through	441	440	99.8%	5.7	0.9	A	46
	Right Turn	66	65	98.0%	5.2	1.3	A	6
	Subtotal	560	556	99.3%	6.0	1.1	A	61
WB	Left Turn	30	30	101.3%	11.5	5.9	B	6
	Through	160	161	100.7%	5.1	1.7	A	15
	Right Turn	45	43	94.9%	3.6	1.0	A	3
	Subtotal	235	234	99.7%	5.6	1.5	A	24
Total		971	969	99.8%	7.9	1.1	A	141

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
Existing  
AM Peak Hour

## Intersection 9 Constitution Ave/W Elizabeth St Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	3	3	110.0%	12.0	13.2	B	1
	Through	4	5	115.0%	17.7	14.4	B	1
	Right Turn	20	21	106.0%	5.7	2.3	A	2
	Subtotal	27	29	107.8%	9.3	4.7	A	4
SB	Left Turn	36	34	95.3%	19.0	6.0	B	12
	Through	9	9	103.3%	21.7	5.5	C	4
	Right Turn	32	36	112.2%	7.8	2.1	A	5
	Subtotal	77	80	103.2%	14.3	3.3	B	21
EB	Left Turn	26	26	100.8%	7.4	5.7	A	4
	Through	499	500	100.1%	4.0	1.3	A	36
	Right Turn	5	6	110.0%	2.0	2.8	A	0
	Subtotal	530	531	100.3%	4.1	1.2	A	40
WB	Left Turn	2	2	80.0%	0.8	1.4	A	0
	Through	150	151	100.5%	4.1	2.8	A	11
	Right Turn	15	21	139.3%	6.9	3.8	A	3
	Subtotal	167	173	103.7%	4.4	2.7	A	14
Total		801	813	101.5%	5.7	1.1	A	79

## Intersection 11 Taft Hill Rd/W Elizabeth St Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	51	47	91.6%	16.4	2.1	B	14
	Through	739	740	100.2%	18.7	2.0	B	253
	Right Turn	111	108	97.4%	18.4	2.5	B	37
	Subtotal	901	895	99.4%	18.5	1.6	B	304
SB	Left Turn	91	90	98.5%	23.1	6.0	C	38
	Through	547	544	99.5%	13.1	1.8	B	130
	Right Turn	47	48	101.5%	12.3	5.0	B	11
	Subtotal	685	681	99.5%	14.4	2.1	B	179
EB	Left Turn	121	120	99.0%	33.6	5.3	C	74
	Through	239	248	103.8%	40.3	3.0	D	183
	Right Turn	153	154	100.7%	16.8	3.4	B	47
	Subtotal	513	522	101.7%	31.9	2.7	C	304
WB	Left Turn	100	100	99.6%	31.6	8.6	C	58
	Through	109	117	107.3%	30.2	6.5	C	65
	Right Turn	32	31	96.9%	5.5	1.9	A	3
	Subtotal	241	248	102.7%	27.6	4.0	C	126
Total		2,340	2,346	100.3%	21.3	1.6	C	913

## Intersection 12 Overland Trail/W Elizabeth St Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	4	4	100.0%	1.2	2.2	A	0
	Through	455	449	98.7%	0.5	0.1	A	4
	Right Turn	69	74	106.7%	0.9	0.2	A	1
	Subtotal	528	527	99.8%	0.6	0.1	A	6
SB	Left Turn	33	34	103.6%	3.3	1.7	A	2
	Through	272	278	102.1%	0.3	0.1	A	2
	Right Turn	10	11	111.0%	0.5	0.2	A	0
	Subtotal	315	323	102.5%	0.7	0.2	A	4
EB	Left Turn	11	13	117.3%	11.3	6.5	B	3
	Through	1	1	110.0%	5.5	12.2	A	0
	Right Turn	1	1	70.0%	1.0	2.1	A	0
	Subtotal	13	15	113.1%	11.3	6.7	B	3
WB	Left Turn	51	52	102.7%	21.6	6.3	C	21
	Through	4	4	105.0%	10.4	10.1	B	1
	Right Turn	65	69	106.5%	12.9	6.6	B	16
	Subtotal	120	126	104.8%	16.5	5.9	C	38
Total		976	990	101.5%	3.4	1.0	A	50

# Bicyclists

Vissim Post-Processor

Bike

AM Peak

Average Results from 10 Runs

Volume and Delay by Movement

## Intersection 2

### Shields St/W Laurel St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	10	9	92.0%	11.0	11.4	1.8
	Right Turn	5	4	78.0%	0.4	1.0	0.0
	Subtotal	15	13	87.3%	7.3	6.5	1.9
SB	Left Turn	15	12	76.7%	11.7	6.9	2.9
	Through	4	3	62.5%	0.8	1.7	0.1
	Right Turn						
	Subtotal	19	14	73.7%	11.0	7.0	3.0
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	5	4	80.0%	33.7	30.7	2.8
	Through						
	Right Turn						
	Subtotal	5	4	80.0%	33.7	30.7	2.8
Total		39	31	79.7%	13.8	5.7	7.6

## Intersection 3

### Shields St/W Plum St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	14	12	85.7%	5.6	5.9	1.3
	Right Turn	5	4	88.0%	0.4	1.1	0.0
	Subtotal	19	16	86.3%	5.0	5.4	1.3
SB	Left Turn	3	3	83.3%	10.8	19.4	0.5
	Through	5	3	60.0%	0.0	0.0	0.0
	Right Turn	1	1	100.0%	0.0	0.0	0.0
	Subtotal	9	7	72.2%	6.7	11.3	0.5
EB	Left Turn	1	1	130.0%	9.2	17.1	0.2
	Through	140	138	98.2%	39.5	7.7	92.3
	Right Turn	2	2	100.0%	6.5	16.8	0.2
	Subtotal	143	141	98.5%	39.3	7.5	92.6
WB	Left Turn						
	Through	7	4	57.1%	31.0	35.0	3.6
	Right Turn						
	Subtotal	7	4	57.1%	31.0	35.0	3.6
Total		178	168	94.2%	34.3	7.4	98.13

## Intersection 4

### Shields St/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	1	60.0%	1.8	5.2	0
	Through	6	12	200.0%	5.6	5.9	0.6
	Right Turn	9	9	95.6%	0.6	0.8	0.1
	Subtotal	16	21	132.5%	4.0	4.0	0.7
SB	Left Turn	4	4	102.5%	23.6	31.4	1.6
	Through	2	0	20.0%	0.0	0.0	0.0
	Right Turn	1	1	70.0%	0.0	0.0	0.0
	Subtotal	7	5	74.3%	23.0	31.7	1.6
EB	Left Turn	8	7	92.5%	41.1	35.0	5.5
	Through	112	114	101.6%	41.9	12.9	78.3
	Right Turn	2	2	95.0%	4.0	5.7	0.1
	Subtotal	122	123	100.9%	41.8	13.2	83.9
WB	Left Turn	3	3	113.3%	43.2	36.3	2.2
	Through	6	5	78.3%	39.0	29.0	3.9
	Right Turn	5	4	76.0%	0.6	1.1	0.0
	Subtotal	14	12	85.0%	35.5	18.3	6.1
Total		159	161	101.5%	35.5	10.2	92.2

# Bicyclists

Vissim Post-Processor

Bike

AM Peak

Average Results from 10 Runs

Volume and Delay by Movement

## Intersection 5 Shields St/Lake St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	11	12	109.1%	5.0	5.8	0.9
	Through	52	51	98.8%	0.7	0.7	0.6
	Right Turn	63	63	100.6%	1.5	1.1	1.5
	Subtotal	63	63	100.6%	1.5	1.1	1.5
SB	Left Turn	1	1	50.0%	0.0	0.0	0.0
	Through	6	5	86.7%	5.3	9.1	0.5
	Right Turn	7	6	81.4%	5.3	9.1	0.5
	Subtotal	7	6	81.4%	5.3	9.1	0.5
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	8	7	87.5%	38.1	25.7	5.1
	Through	7	5	70.0%	7.8	8.2	0.9
	Right Turn	15	12	79.3%	28.0	16.1	6.0
	Subtotal	15	12	79.3%	28.0	16.1	6.0
<b>Total</b>		<b>85</b>	<b>81</b>	<b>95.3%</b>	<b>5.6</b>	<b>2.9</b>	<b>8.1</b>

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	41	39	95.9%	17.3	8.9	11.8
	Through	41	39	95.9%	17.3	8.9	11.8
	Right Turn	41	39	95.9%	17.3	8.9	11.8
	Subtotal	41	39	95.9%	17.3	8.9	11.8
SB	Left Turn	1	1	100.0%	5.6	11.0	0.1
	Through	13	10	80.0%	4.1	5.9	0.9
	Right Turn	14	11	81.4%	5.3	5.8	1.0
	Subtotal	14	11	81.4%	5.3	5.8	1.0
EB	Left Turn	22	23	102.7%	64.8	22.7	23.8
	Through	10	10	96.0%	34.3	21.0	5.7
	Right Turn	4	4	95.0%	4.2	7.2	0.3
	Subtotal	36	36	100.0%	53.0	18.6	29.8
WB	Left Turn	1	0	0.0%	0.0	0.0	0.0
	Through	1	0	0.0%	0.0	0.0	0.0
	Right Turn	1	0	0.0%	0.0	0.0	0.0
	Subtotal	1	0	0.0%	0.0	0.0	0.0
<b>Total</b>		<b>92</b>	<b>87</b>	<b>94.2%</b>	<b>29.8</b>	<b>8.5</b>	<b>42.6</b>

## Intersection 8 City Park Ave/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	6	6	98.3%	13.6	12.7	1.4
	Through	21	21	98.6%	3.4	1.4	1.2
	Right Turn	27	27	98.5%	5.9	3.2	2.5
	Subtotal	27	27	98.5%	5.9	3.2	2.5
SB	Left Turn	6	7	113.3%	8.3	9.8	0.8
	Through	2	2	105.0%	14.2	17.6	0.5
	Right Turn	8	9	111.3%	12.7	10.8	1.3
	Subtotal	8	9	111.3%	12.7	10.8	1.3
EB	Left Turn	2	1	65.0%	2.9	5.9	0.1
	Through	93	93	100.4%	12.8	2.2	19.8
	Right Turn	2	2	75.0%	6.5	12.1	0.2
	Subtotal	97	96	99.2%	12.8	2.0	20.1
WB	Left Turn	3	2	80.0%	4.0	7.8	0.2
	Through	3	2	63.3%	0.0	0.0	0.0
	Right Turn	6	4	71.7%	4.0	7.8	0.2
	Subtotal	6	4	71.7%	4.0	7.8	0.2
<b>Total</b>		<b>138</b>	<b>136</b>	<b>98.6%</b>	<b>11.0</b>	<b>1.5</b>	<b>24.1</b>

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bike AM Peak

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	1	50.0%	3.0	6.9	0
	Through	1	1	60.0%	0.0	0.0	0.0
	Right Turn	5	3	56.0%	2.6	1.8	0.2
	Subtotal	7	4	55.7%	4.4	3.9	0.3
SB	Left Turn	1	1	80.0%	0.0	0.0	0.0
	Through	1	0	40.0%	2.7	8.5	0.0
	Right Turn						
	Subtotal	2	1	60.0%	2.7	8.5	0.0
EB	Left Turn	1	1	120.0%	4.4	8.1	0.1
	Through	62	62	99.4%	11.4	4.4	11.7
	Right Turn						
	Subtotal	63	63	99.7%	11.4	4.4	11.8
WB	Left Turn						
	Through	3	2	76.7%	0.5	1.5	0.0
	Right Turn						
	Subtotal	3	2	76.7%	0.5	1.5	0.0
Total		75	70	93.6%	9.9	3.5	12.2

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	4	3	82.5%	8.0	10.6	0.5
	Right Turn	2	1	60.0%	3.8	11.9	0.1
	Subtotal	6	5	75.0%	9.5	11.6	0.7
SB	Left Turn	2	2	110.0%	6.5	14.6	0.2
	Through	1	1	80.0%	0.2	0.7	0.0
	Right Turn						
	Subtotal	3	3	100.0%	6.7	14.5	0.2
EB	Left Turn						
	Through	57	56	98.4%	35.7	7.4	33.9
	Right Turn						
	Subtotal	57	56	98.4%	35.7	7.4	33.9
WB	Left Turn	2	1	25.0%	4.7	14.8	0.2
	Through						
	Right Turn	1	1	120.0%	0.2	0.6	0.0
	Subtotal	3	2	56.7%	3.2	10.0	0.2
Total		69	65	94.6%	30.7	6.7	35.0

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	14	12	86.4%	0.0	0.0	0.0
	Right Turn						
	Subtotal	14	12	86.4%	0.0	0.0	0.0
SB	Left Turn						
	Through	5	6	120.0%	0.0	0.0	0.0
	Right Turn						
	Subtotal	5	6	120.0%	0.0	0.0	0.0
EB	Left Turn	1	1	70.0%	1.1	1.8	0.0
	Through						
	Right Turn						
	Subtotal	1	1	70.0%	1.1	1.8	0.0
WB	Left Turn	1	0	0.0%	0.0	0.0	0.0
	Through	1	1	140.0%	3.9	5.1	0.1
	Right Turn	3	0	0.0%	0.0	0.0	0.0
	Subtotal	5	1	28.0%	3.9	5.1	0.1
Total		25	20	80.8%	0.8	1.0	0.1

# Pedestrians

Vissim Post-Processor

Crosswalk AM Peak

Average Results from 10 Runs

Volume and Delay by Movement

## Shields St/W Laurel St

Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
	Average	Percent	Average	Std. Dev.	
37	34	91.4%	46.1	10.1	26.0

## Shields St/W Plum St

Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
	Average	Percent	Average	Std. Dev.	
106	103	97.0%	50.5	5.1	86.6

## Shields St/W Elizabeth St

Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
	Average	Percent	Average	Std. Dev.	
90	87	96.9%	52.8	5.7	76.7

## Shields St/Lake St

Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
	Average	Percent	Average	Std. Dev.	
54	55	102.4%	49.9	12.1	46.0

## Shields St/Prospect

Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
	Average	Percent	Average	Std. Dev.	
68	67	98.5%	53.6	7.5	59.9

## Ped Crossing/W Elizabeth St

Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
	Average	Percent	Average	Std. Dev.	
1	1	60.0%	0.0	0.0	0.0

## City Park Ave/W Elizabeth St

Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
	Average	Percent	Average	Std. Dev.	
36	36	98.9%	20.3	6.3	12.1

## Constitution Ave/W Elizabeth St

Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
	Average	Percent	Average	Std. Dev.	
9	9	95.6%	18.0	14.6	2.6

## Ped Signal/W Elizabeth St

Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
	Average	Percent	Average	Std. Dev.	
2	3	135.0%	13.5	20.0	0.6

## Taft Hill Rd/W Elizabeth St

Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
	Average	Percent	Average	Std. Dev.	
17	16	91.2%	35.3	11.2	9.1

## Overland Trail/W Elizabeth St

Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
	Average	Percent	Average	Std. Dev.	
2	3	130.0%	0.0	0.0	0.0

# Transit

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Transit AM Peak

## Intersection 2 Shields St/W Laurel St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn	2	101	2	100.0%	0.0	0.0	0.0
	Subtotal	2	101	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	2	19	2	100.0%	53.1	5.2	4.2
	Through							
	Right Turn							
	Subtotal	2	19	2	100.0%	53.1	5.2	4.2
Total		4	120	4	100.0%	35.4	3.5	4.2

## Intersection 3 Shields St/W Plum St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn	2	101	2	100.0%	0.0	0.0	0.0
	Through							
	Right Turn	3	205	3	100.0%	7.2	8.1	6.1
	Subtotal	5	306	5	100.0%	7.2	8.1	6.1
SB	Left Turn	2	19	2	100.0%	16.7	4.1	1.3
	Through							
	Right Turn							
	Subtotal	2	19	2	100.0%	16.7	4.1	1.3
EB	Left Turn	6	490	6	100.0%	69.0	44.8	140.8
	Through							
	Right Turn							
	Subtotal	6	490	6	100.0%	69.0	44.8	140.8
WB	Left Turn	2	16	2	100.0%	90.7	5.3	6.0
	Through	8	58	8	100.0%	39.5	4.1	9.5
	Right Turn							
	Subtotal	10	74	10	100.0%	56.5	3.1	15.6
Total		23	889	23	100.0%	43.7	8.9	163.8

## Intersection 4 Shields St/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	101	2	100.0%	47.7	26.9	20.1
	Right Turn							
	Subtotal	2	101	2	100.0%	47.7	26.9	20.1
SB	Left Turn							
	Through	2	19	2	100.0%	0.0	0.0	0.0
	Right Turn	2	16	2	100.0%	0.0	0.0	0.0
	Subtotal	4	35	4	100.0%	0.0	0.0	0.0
EB	Left Turn	3	205	3	100.0%	47.0	18.9	40.2
	Through							
	Right Turn							
	Subtotal	3	205	3	100.0%	47.0	18.9	40.2
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		9	341	9	100.0%	31.6	11.6	60.3

# Transit

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Transit AM Peak

## Intersection 5 Shields St/Lake St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	243	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	243	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through	2	25	2	100.0%	5.2	10.7	0.5
	Right Turn							
	Subtotal	2	25	2	100.0%	5.2	10.7	0.5
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		4	268	4	100.0%	3.5	7.1	0.5

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	103	2	100.0%	49.4	8.3	21.2
	Right Turn							
	Subtotal	2	103	2	100.0%	49.4	8.3	21.2
SB	Left Turn							
	Through	2	25	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	25	2	100.0%	0.0	0.0	0.0
EB	Left Turn	2	139	2	100.0%	171.5	47.8	99.3
	Through							
	Right Turn							
	Subtotal		139					99.3
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		4	267	4	100.0%	33.0	5.6	120.5

## Intersection 8 City Park Ave/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn	6	154	6	100.0%	30.3	13.7	19.4
	Subtotal	6	154	6	100.0%	30.3	13.7	19.4
EB	Left Turn							
	Through	3	201	3	100.0%	20.1	7.8	16.9
	Right Turn							
	Subtotal	3	201	3	100.0%	20.1	7.8	16.9
WB	Left Turn							
	Through	2	16	2	100.0%	13.3	10.1	0.9
	Right Turn							
	Subtotal	2	16	2	100.0%	13.3	10.1	0.9
Total		11	371	11	100.0%	23.5	8.9	37.2



# Transit

Vissim Post-Processor  
 Average Results from 10 Runs  
 Volume and Delay by Movement

Transit AM Peak

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn	2	12	2	100.0%	0.0	0.0	0.0
	Subtotal	2	12	2	100.0%	0.0	0.0	0.0
EB	Left Turn							
	Through	3	196	3	100.0%	29.3	7.3	23.9
	Right Turn							
	Subtotal	3	196	3	100.0%	29.3	7.3	23.9
WB	Left Turn							
	Through	2	19	2	100.0%	0.0	0.0	0.0
	Right Turn	6	198	6	100.0%	9.9	0.7	8.2
	Subtotal	8	217	8	100.0%	9.9	0.7	8.2
Total		13	425	13	100.0%	16.6	2.9	32.1

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	1	38	1	100.0%	18.7	2.0	3.0
	Right Turn							
	Subtotal		38					3.0
SB	Left Turn							
	Through	1	9	1	100.0%	13.1	1.8	0.5
	Right Turn							
	Subtotal		9					0.5
EB	Left Turn							
	Through	4	160	4	100.0%	86.7	15.6	57.8
	Right Turn							
	Subtotal	4	160	4	100.0%	86.7	15.6	57.8
WB	Left Turn							
	Through	4	29	4	97.5%	47.1	15.4	5.7
	Right Turn							
	Subtotal	4	29	4	97.5%	47.1	15.4	5.7
Total		8	236	8	98.8%	60.1	10.6	66.9

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn	2	26	2	100.0%	0.0	0.0	0.0
	Subtotal	2	26	2	100.0%	0.0	0.0	0.0
SB	Left Turn	2	7	2	100.0%	7.2	4.0	0.2
	Through							
	Right Turn							
	Subtotal	2	7	2	100.0%	7.2	4.0	0.2
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	2	65	2	100.0%	0.0	0.0	0.0
	Through							
	Right Turn	2	16	2	100.0%	66.0	31.6	4.4
	Subtotal	4	81	4	100.0%	66.0	31.6	4.4
Total		8	114	8	100.0%	29.3	12.8	4.6

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
TSM Alt  
AM Peak Hour

## Intersection 2 Shields St/W Laurel St Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn							
	Through	719	695	96.6%	4.5	2.1	A	57
	Right Turn	413	397	96.1%	5.8	1.6	A	42
	Subtotal	1,132	1,092	96.4%	5.0	1.8	A	99
SB	Left Turn	130	131	100.5%	21.4	5.7	C	51
	Through	667	666	99.8%	11.0	1.9	B	134
	Right Turn							
	Subtotal	797	797	99.9%	12.8	2.5	B	186
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	128	122	94.9%	44.5	6.6	D	99
	Through							
	Right Turn	61	61	100.0%	9.6	2.4	A	11
	Subtotal	189	183	96.6%	33.4	6.0	C	110
Total		2,118	2,071	97.8%	11.9	1.3	B	394

## Intersection 3 Shields St/W Plum St Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	13	13	102.3%	8.9	9.1	A	2
	Through	1,064	1,031	96.9%	2.7	0.9	A	50
	Right Turn	37	37	101.1%	2.5	1.2	A	2
	Subtotal	1,114	1,082	97.1%	2.7	0.9	A	54
SB	Left Turn	13	13	100.8%	22.6	10.0	C	5
	Through	764	760	99.5%	6.5	0.9	A	90
	Right Turn	18	17	92.8%	6.9	4.7	A	2
	Subtotal	795	790	99.3%	6.8	0.8	A	97
EB	Left Turn	51	51	99.2%	54.9	12.8	D	51
	Through	25	38	150.0%	58.4	7.6	E	40
	Right Turn	34	34	100.3%	47.0	12.2	D	29
	Subtotal	110	122	111.1%	54.0	8.9	D	120
WB	Left Turn	17	17	98.2%	47.9	17.4	D	15
	Through	18	31	172.8%	42.0	6.3	D	24
	Right Turn	17	16	91.2%	6.8	3.7	A	2
	Subtotal	52	63	121.7%	37.1	8.3	D	41
Total		2,071	2,057	99.3%	9.3	1.1	A	312

## Intersection 4 Shields St/W Elizabeth St Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	140	145	103.6%	22.2	4.9	C	59
	Through	851	831	97.6%	11.1	1.6	B	170
	Right Turn	54	56	103.9%	10.2	3.4	B	11
	Subtotal	1,045	1,032	98.8%	12.6	1.8	B	239
SB	Left Turn	24	22	91.7%	23.7	15.4	C	10
	Through	653	653	100.0%	7.6	1.6	A	91
	Right Turn	138	135	97.8%	2.9	0.6	A	7
	Subtotal	815	810	99.4%	7.4	1.6	A	107
EB	Left Turn	258	248	96.1%	45.5	5.6	D	207
	Through	27	27	98.1%	37.7	11.3	D	18
	Right Turn	296	285	96.2%	32.5	18.5	C	170
	Subtotal	581	559	96.2%	38.7	8.4	D	395
WB	Left Turn	15	14	90.0%	46.5	14.8	D	12
	Through	5	5	108.0%	38.4	29.6	D	4
	Right Turn	5	5	96.0%	10.6	8.4	B	1
	Subtotal	25	24	94.8%	38.3	10.6	D	16
Total		2,466	2,425	98.3%	16.7	1.5	B	758

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
TSM Alt  
AM Peak Hour

Intersection 5		Shields St/Lake St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn							
	Through	1,178	1,177	99.9%	3.3	0.8	A	72
	Right Turn	154	155	100.9%	4.4	1.4	A	13
	Subtotal	1,332	1,332	100.0%	3.5	0.9	A	85
SB	Left Turn	123	118	96.1%	41.1	6.4	D	89
	Through	768	746	97.1%	5.0	1.1	A	68
	Right Turn							
	Subtotal	891	864	97.0%	9.8	1.8	A	157
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	61	62	101.8%	47.6	4.2	D	54
	Through							
	Right Turn	37	37	99.7%	4.8	0.8	A	3
	Subtotal	98	99	101.0%	31.8	3.7	C	57
Total		2,321	2,296	98.9%	7.0	1.1	A	299

Intersection 6		Shields St/Prospect			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	56	54	96.6%	25.5	8.7	C	25
	Through	946	943	99.7%	21.2	2.7	C	367
	Right Turn	136	129	94.5%	16.1	2.5	B	38
	Subtotal	1,138	1,126	98.9%	20.8	2.5	C	430
SB	Left Turn	145	152	105.0%	33.0	5.5	C	92
	Through	630	602	95.5%	6.9	0.8	A	76
	Right Turn	54	54	99.4%	2.4	1.2	A	2
	Subtotal	829	808	97.5%	11.9	1.4	B	171
EB	Left Turn	241	237	98.2%	141.0	33.3	F	612
	Through	713	730	102.3%	121.0	27.1	F	1,619
	Right Turn	152	149	98.2%	83.6	30.3	F	229
	Subtotal	1,106	1,116	100.9%	120.6	27.9	F	2,460
WB	Left Turn	71	70	98.9%	55.2	7.4	E	71
	Through	233	234	100.6%	40.5	3.6	D	174
	Right Turn	145	151	104.3%	32.2	4.8	C	89
	Subtotal	449	456	101.5%	39.9	3.3	D	335
Total		3,522	3,505	99.5%	56.4	10.5	E	3,395

Intersection 8		City Park Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	24	24	99.6%	20.7	2.8	C	9
	Through	33	32	96.4%	19.7	4.6	B	11
	Right Turn	35	34	96.3%	11.2	3.8	B	7
	Subtotal	92	89	97.2%	16.7	3.6	B	27
SB	Left Turn	34	33	97.1%	21.9	5.1	C	13
	Through	32	33	103.1%	20.0	8.5	B	12
	Right Turn	18	21	117.8%	15.0	5.4	B	6
	Subtotal	84	87	103.8%	18.9	4.5	B	31
EB	Left Turn	53	49	91.9%	6.7	2.5	A	6
	Through	441	422	95.7%	5.1	1.2	A	39
	Right Turn	66	66	100.2%	5.3	1.5	A	6
	Subtotal	560	537	95.9%	5.3	1.2	A	52
WB	Left Turn	30	31	103.3%	10.7	5.7	B	6
	Through	160	161	100.4%	5.0	2.2	A	15
	Right Turn	45	43	96.4%	3.7	1.4	A	3
	Subtotal	235	235	100.0%	5.4	2.0	A	24
Total		971	948	97.7%	7.6	1.4	A	134

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
TSM Alt  
AM Peak Hour

## Intersection 9 Constitution Ave/W Elizabeth St Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	3	3	103.3%	8.6	13.0	A	0
	Through	4	4	87.5%	18.2	18.8	B	1
	Right Turn	20	20	98.0%	6.1	2.3	A	2
	Subtotal	27	26	97.0%	9.2	5.5	A	4
SB	Left Turn	36	35	95.8%	22.3	5.5	C	14
	Through	9	9	95.6%	24.3	10.0	C	4
	Right Turn	32	40	123.8%	9.0	3.0	A	7
	Subtotal	77	83	107.4%	16.1	2.6	B	24
EB	Left Turn	26	29	110.0%	10.9	3.4	B	6
	Through	499	480	96.3%	5.0	1.8	A	44
	Right Turn	5	5	98.0%	2.8	3.9	A	0
	Subtotal	530	514	97.0%	5.3	1.7	A	50
WB	Left Turn	2	2	100.0%	4.1	5.8	A	0
	Through	150	146	97.3%	5.3	2.2	A	14
	Right Turn	15	21	142.0%	5.9	2.1	A	2
	Subtotal	167	169	101.4%	5.5	2.0	A	17
Total		801	792	98.9%	7.0	1.4	A	95

## Intersection 11 Taft Hill Rd/W Elizabeth St Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	51	49	95.9%	16.5	3.8	B	15
	Through	739	734	99.3%	18.6	2.4	B	250
	Right Turn	111	106	95.8%	18.1	3.1	B	35
	Subtotal	901	889	98.6%	18.5	2.2	B	300
SB	Left Turn	91	87	95.3%	24.0	7.9	C	38
	Through	547	549	100.4%	12.9	1.5	B	130
	Right Turn	47	46	97.2%	11.8	3.8	B	10
	Subtotal	685	682	99.5%	14.3	2.0	B	178
EB	Left Turn	121	122	100.5%	35.9	3.7	D	80
	Through	239	237	99.2%	39.6	6.0	D	172
	Right Turn	153	153	99.9%	16.2	4.4	B	45
	Subtotal	513	511	99.7%	31.8	3.7	C	298
WB	Left Turn	100	96	95.5%	32.8	10.5	C	57
	Through	109	116	106.1%	29.4	4.6	C	62
	Right Turn	32	33	103.1%	6.0	1.5	A	4
	Subtotal	241	244	101.3%	27.7	5.6	C	123
Total		2,340	2,326	99.4%	21.3	1.9	C	898

## Intersection 12 Overland Trail/W Elizabeth St Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	4	5	127.5%	1.4	2.2	A	0
	Through	455	448	98.5%	0.5	0.1	A	4
	Right Turn	69	69	99.4%	0.8	0.2	A	1
	Subtotal	528	522	98.8%	0.6	0.1	A	5
SB	Left Turn	33	32	95.8%	2.4	0.8	A	1
	Through	272	275	101.0%	0.4	0.1	A	2
	Right Turn	10	10	95.0%	0.5	0.2	A	0
	Subtotal	315	316	100.3%	0.6	0.2	A	3
EB	Left Turn	11	11	102.7%	13.2	8.1	B	3
	Through	1	7	680.0%	23.6	5.3	C	3
	Right Turn	1	1	110.0%	0.5	1.6	A	0
	Subtotal	13	19	147.7%	19.6	4.3	C	6
WB	Left Turn	51	51	99.4%	18.1	7.4	C	17
	Through	4	10	245.0%	44.2	19.0	E	8
	Right Turn	65	66	100.9%	14.7	6.9	B	18
	Subtotal	120	126	105.1%	17.7	5.9	C	42
Total		976	983	100.7%	3.7	1.1	A	57

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bike

WCAP W Elizabeth St  
TSM Alt  
AM Peak Hour  
L

## Intersection 2 Shields St/W Laurel St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	10	9	86.0%	16.5	12.3	2.8
	Right Turn	5	4	88.0%	0.4	1.0	0.0
	Subtotal	15	13	86.7%	9.9	5.2	2.8
SB	Left Turn	15	11	72.7%	14.0	12.9	3.5
	Through	4	2	57.5%	0.7	1.5	0.0
	Right Turn						
	Subtotal	19	13	69.5%	11.3	10.4	3.6
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	5	4	84.0%	35.3	31.6	2.9
	Through						
	Right Turn						
	Subtotal	5	4	84.0%	35.3	31.6	2.9
Total		39	30	77.9%	14.9	7.6	9.3

## Intersection 3 Shields St/W Plum St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	14	12	87.1%	3.3	5.3	0.8
	Right Turn	5	5	102.0%	0.9	2.0	0.1
	Subtotal	19	17	91.1%	2.6	4.1	0.8
SB	Left Turn	3	2	76.7%	5.8	17.4	0.3
	Through	5	3	68.0%	0.2	0.3	0.0
	Right Turn	1	1	80.0%	0.0	0.0	0.0
	Subtotal	9	7	72.2%	3.2	8.8	0.3
EB	Left Turn	1	1	120.0%	3.8	8.0	0.1
	Through	140	139	98.9%	39.6	3.9	92.4
	Right Turn	2	2	120.0%	7.4	16.9	0.2
	Subtotal	143	142	99.4%	39.0	4.1	92.7
WB	Left Turn						
	Through	7	4	60.0%	34.0	36.3	4.0
	Right Turn						
	Subtotal	7	4	60.0%	34.0	36.3	4.0
Total		178	170	95.6%	34.0	4.9	97.81

## Intersection 4 Shields St/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	1	100.0%	14.5	24.8	0
	Through	6	12	203.3%	3.3	5.3	0.3
	Right Turn	9	10	111.1%	0.2	0.4	0.0
	Subtotal	16	23	145.0%	5.8	7.9	0.6
SB	Left Turn	4	4	110.0%	18.4	26.2	1.2
	Through	2	1	25.0%	0.0	0.0	0.0
	Right Turn	1	1	100.0%	0.0	0.0	0.0
	Subtotal	7	6	84.3%	18.0	26.4	1.2
EB	Left Turn	8	7	92.5%	36.9	30.1	4.9
	Through	112	112	99.6%	43.9	14.5	81.9
	Right Turn	2	2	80.0%	4.7	13.5	0.2
	Subtotal	122	121	98.8%	43.6	14.2	87.0
WB	Left Turn	3	4	116.7%	29.5	29.9	1.5
	Through	6	4	68.3%	36.2	27.7	3.6
	Right Turn	5	4	82.0%	0.2	0.3	0.0
	Subtotal	14	12	83.6%	30.4	16.5	5.1
Total		159	161	101.4%	36.5	12.8	93.9

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bike

WCAP W Elizabeth St  
TSM Alt  
AM Peak Hour  
L

## Intersection 5 Shields St/Lake St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	11	12	110.9%	4.9	5.1	0.9
	Through	52	51	98.1%	0.7	0.7	0.6
	Right Turn						
	Subtotal	63	63	100.3%	1.6	1.0	1.5
SB	Left Turn	1	1	50.0%	0.0	0.0	0.0
	Through	6	5	83.3%	5.3	11.0	0.5
	Right Turn						
	Subtotal	7	6	78.6%	5.3	11.0	0.5
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	8	6	76.3%	38.0	25.1	5.1
	Through						
	Right Turn	7	6	82.9%	10.3	9.6	1.2
	Subtotal	15	12	79.3%	27.5	15.8	6.3
Total		85	81	94.8%	5.6	2.8	8.3

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	41	40	96.8%	17.0	5.5	11.6
	Through						
	Right Turn						
	Subtotal	41	40	96.8%	17.0	5.5	11.6
SB	Left Turn	1	1	80.0%	0.0	0.0	0.0
	Through	13	10	74.6%	7.6	5.6	1.6
	Right Turn						
	Subtotal	14	11	75.0%	7.6	5.6	1.6
EB	Left Turn	22	24	106.8%	68.3	12.4	25.0
	Through	10	9	91.0%	22.6	15.8	3.8
	Right Turn	4	4	87.5%	6.9	10.0	0.5
	Subtotal	36	36	100.3%	51.0	9.9	29.3
WB	Left Turn	1	0	0.0%	0.0	0.0	0.0
	Through						
	Right Turn						
	Subtotal	1	0	0.0%	0.0	0.0	0.0
Total		92	86	93.8%	30.5	5.3	42.5

## Intersection 8 City Park Ave/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	6	6	93.3%	18.8	14.7	1.9
	Through	21	21	99.5%	3.6	1.6	1.3
	Right Turn						
	Subtotal	27	27	98.1%	7.5	3.2	3.2
SB	Left Turn	6	7	120.0%	14.5	14.5	1.4
	Through	2	2	120.0%	10.3	15.7	0.3
	Right Turn						
	Subtotal	8	10	120.0%	16.8	12.7	1.8
EB	Left Turn	2	1	45.0%	10.2	26.6	0.3
	Through	93	91	98.0%	12.4	3.1	19.3
	Right Turn	2	2	75.0%	2.5	6.9	0.1
	Subtotal	97	94	96.4%	12.7	3.2	19.7
WB	Left Turn	3	2	63.3%	2.9	7.4	0.1
	Through	3	3	93.3%	0.0	0.0	0.0
	Right Turn						
	Subtotal	6	5	78.3%	2.9	7.4	0.1
Total		138	134	97.3%	11.4	1.6	24.8

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bike

WCAP W Elizabeth St  
TSM Alt  
AM Peak Hour  
L

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	1	60.0%	0.9	3.0	0.0
	Through	1	0	20.0%	0.0	0.0	0.0
	Right Turn	5	2	46.0%	1.6	1.8	0.1
	Subtotal	7	3	44.3%	2.6	2.9	0.2
SB	Left Turn	1	1	90.0%	0.1	0.3	0.0
	Through	1	1	50.0%	4.2	13.2	0.1
	Right Turn						
	Subtotal	2	1	70.0%	4.3	13.2	0.1
EB	Left Turn	1	1	100.0%	7.3	15.5	0.1
	Through	62	59	95.5%	11.6	3.1	12.0
	Right Turn						
	Subtotal	63	60	95.6%	12.2	3.8	12.1
WB	Left Turn						
	Through	3	2	60.0%	4.6	8.1	0.2
	Right Turn						
	Subtotal	3	2	60.0%	4.6	8.1	0.2
Total		75	67	88.7%	10.9	2.9	12.6

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	4	3	80.0%	9.1	14.2	0.6
	Right Turn	2	1	65.0%	8.0	14.1	0.3
	Subtotal	6	5	75.0%	11.7	11.2	0.9
SB	Left Turn	2	2	105.0%	0.2	0.6	0.0
	Through	1	1	70.0%	0.0	0.0	0.0
	Right Turn						
	Subtotal	3	3	93.3%	0.2	0.6	0.0
EB	Left Turn						
	Through	57	54	95.1%	32.3	5.4	30.7
	Right Turn						
	Subtotal	57	54	95.1%	32.3	5.4	30.7
WB	Left Turn	2	1	30.0%	7.8	15.5	0.3
	Through						
	Right Turn	1	1	90.0%	1.5	4.7	0.0
	Subtotal	3	2	50.0%	8.1	13.5	0.3
Total		69	63	91.3%	27.6	4.7	31.9

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	14	13	93.6%	0.2	0.7	0.1
	Right Turn						
	Subtotal	14	13	93.6%	0.2	0.7	0.1
SB	Left Turn						
	Through	5	5	102.0%	0.0	0.0	0.0
	Right Turn						
	Subtotal	5	5	102.0%	0.0	0.0	0.0
EB	Left Turn	1	1	80.0%	0.8	1.8	0.0
	Through						
	Right Turn						
	Subtotal	1	1	80.0%	0.8	1.8	0.0
WB	Left Turn	1	0	0.0%	0.0	0.0	0.0
	Through	1	2	160.0%	7.0	6.7	0.1
	Right Turn	3	0	0.0%	0.0	0.0	0.0
	Subtotal	5	2	32.0%	7.0	6.7	0.1
Total		25	21	82.4%	1.6	1.7	0.2

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk AM Peak  
TSM Alt

## Intersection 2 Shields St/W Laurel St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through						
	Right Turn	1	1	90.0%	12.2	24.5	
	Subtotal	1	1	90.0%	12.2	24.5	
SB	Left Turn	8	7	92.5%	46.1	23.0	
	Through						
	Right Turn						
	Subtotal	8	7	92.5%	46.1	23.0	
EB	Left Turn	26	22	85.4%	51.3	8.1	
	Through						
	Right Turn						
	Subtotal	26	22	85.4%	51.3	8.1	
WB	Left Turn						
	Through						
	Right Turn	2	2	115.0%	41.1	40.1	
	Subtotal	2	2	115.0%	41.1	40.1	
Total		37	33	88.6%	48.3	9.0	26.4

## Intersection 3 Shields St/W Plum St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side						
	East Side	4	5	115.0%	34.0	40.1	
	Subtotal	4	5	115.0%	34.0	40.1	
SB	East Side	4	4	97.5%	20.3	24.9	
	West Side	20	22	110.5%	41.7	20.3	
	Subtotal	24	26	108.3%	42.4	17.8	
EB	North Side	45	46	101.8%	54.7	8.4	
	South Side	31	28	89.4%	56.4	12.4	
	Subtotal	76	74	96.7%	55.1	7.6	
WB	South Side						
	North Side	2	1	70.0%	17.5	30.4	
	Subtotal	2	1	70.0%	17.5	30.4	
Total		106	106	99.5%	50.9	6.0	89.4

## Intersection 4 Shields St/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	80.0%	36.7	47.9	
	East Side	4	4	110.0%	41.4	38.7	
	Subtotal	5	5	104.0%	53.7	34.8	
SB	East Side	2	2	75.0%	43.5	47.3	
	West Side	2	2	95.0%	0.0	0.0	
	Subtotal	4	3	85.0%	43.5	47.3	
EB	North Side	28	25	89.6%	46.3	10.3	
	South Side	51	50	98.6%	54.9	6.1	
	Subtotal	79	75	95.4%	51.2	4.5	
WB	South Side						
	North Side	2	2	80.0%	13.7	30.6	
	Subtotal	2	2	80.0%	13.7	30.6	
Total		90	86	95.1%	51.3	6.2	73.2

## Intersection 5 Shields St/Lake St



# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk AM Peak  
TSM Alt

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side						
	East Side	26	27	103.5%	50.1	18.0	
	Subtotal	26	27	103.5%	50.1	18.0	
SB	East Side						
	West Side						
	Subtotal						
EB	North Side	7	7	100.0%	36.1	30.2	
	South Side						
	Subtotal	7	7	100.0%	36.1	30.2	
WB	South Side						
	North Side	21	23	107.1%	54.4	8.3	
	Subtotal	21	23	107.1%	54.4	8.3	
Total		54	56	104.4%	50.3	9.0	47.3

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	16	16	96.9%	61.0	24.6	
	East Side	26	25	97.3%	56.1	10.0	
	Subtotal	42	41	97.1%	57.0	8.0	
SB	East Side						
	West Side	1	1	100.0%	5.6	14.7	
	Subtotal	1	1	100.0%	5.6	14.7	
EB	North Side	10	9	94.0%	61.7	25.3	
	South Side	11	11	100.9%	45.5	25.2	
	Subtotal	21	21	97.6%	51.5	12.6	
WB	South Side	4	4	105.0%	22.9	25.6	
	North Side						
	Subtotal	4	4	105.0%	22.9	25.6	
Total		68	67	97.8%	52.7	6.1	58.4

## Intersection 7 Ped Crossing/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through						
	Right Turn						
Subtotal							
SB	Left Turn						
	Through						
	Right Turn	1	1	80.0%	0.0	0.0	
Subtotal		1	1	80.0%	0.0	0.0	
EB	Left Turn						
	Through						
	Right Turn						
Subtotal							
WB	Left Turn						
	Through						
	Right Turn						
Subtotal							
Total		1	1	80.0%	0.0	0.0	0.0

## Intersection 8 City Park Ave/W Elizabeth St

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk AM Peak  
TSM Alt

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	9	8	93.3%	30.4	12.7	
	East Side	1	1	80.0%	2.1	4.4	
	Subtotal	10	9	92.0%	28.8	10.8	
SB	East Side	4	5	120.0%	25.2	16.3	
	West Side	4	3	75.0%	15.0	17.4	
	Subtotal	8	8	97.5%	29.1	10.8	
EB	North Side	10	10	97.0%	21.8	10.4	
	South Side	5	5	100.0%	14.7	16.2	
	Subtotal	15	15	98.0%	18.8	9.1	
WB	South Side						
	North Side	3	3	93.3%	5.1	8.9	
	Subtotal	3	3	93.3%	5.1	8.9	
Total		36	35	95.8%	21.8	4.6	12.5

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	1	110.0%	6.2	13.1	
	Through						
	Right Turn	3	3	113.3%	19.2	18.3	
	Subtotal	4	5	112.5%	19.7	18.3	
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	3	3	93.3%	14.5	19.9	
	Through						
	Right Turn	2	2	115.0%	2.6	8.4	
	Subtotal	5	5	102.0%	17.2	19.5	
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		9	10	106.7%	21.7	13.7	3.5

## Intersection 10 Ped Signal/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	2	2	105.0%	16.2	18.7	
	Right Turn						
	Subtotal	2	2	105.0%	16.2	18.7	
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2	2	105.0%	16.2	18.7	0.6

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)	Percent	Total Delay (sec/person)	Total Person Delay (min)
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# Pedestrians

Vissim Post-Processor  
 Average Results from 10 Runs  
 Volume and Delay by Movement

Crosswalk AM Peak  
 TSM Alt

Direction	Movement	Volume (pph)	Average	Percent	Average	Std. Dev.	Delay (min)
NB	West Side						
	East Side	3	3	90.0%	28.5	32.0	
	Subtotal	3	3	90.0%	28.5	32.0	
SB	East Side	4	4	100.0%	30.1	35.3	
	West Side	3	3	106.7%	16.0	25.6	
	Subtotal	7	7	102.9%	32.0	27.0	
EB	North Side						
	South Side	6	7	111.7%	48.8	31.9	
	Subtotal	6	7	111.7%	48.8	31.9	
WB	South Side	1	0	0.0%	0.0	0.0	
	North Side						
	Subtotal	1	0	0.0%	0.0	0.0	
Total		17	17	97.6%	37.8	11.7	10.5

**Intersection 12 Overland Trail/W Elizabeth St**

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	1	80.0%	0.0	0.0	
	Through						
	Right Turn						
Subtotal		1	1	80.0%	0.0	0.0	
SB	Left Turn	1	2	150.0%	0.0	0.0	
	Through						
	Right Turn						
Subtotal		1	2	150.0%	0.0	0.0	
EB	Left Turn						
	Through						
	Right Turn						
Subtotal							
WB	Left Turn						
	Through						
	Right Turn						
Subtotal							
Total		2	2	115.0%	0.0	0.0	0.0

# Transit

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Transit    AM Peak  
TSM Alt

**Intersection 2                      Shields St/W Laurel St**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn	2	101	2	100.0%	0.0	0.0	0.0
	Subtotal	2	101	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	2	19	2	100.0%	52.4	3.5	4.1
	Through							
	Right Turn							
	Subtotal	2	19	2	100.0%	52.4	3.5	4.1
<b>Total</b>		<b>4</b>	<b>120</b>	<b>4</b>	<b>100.0%</b>	<b>34.9</b>	<b>2.3</b>	<b>4.1</b>

**Intersection 3                      Shields St/W Plum St**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn	2	101	2	100.0%	0.0	0.0	0.0
	Subtotal	2	101	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through	2	19	2	100.0%	17.9	4.2	1.4
	Right Turn							
	Subtotal	2	19	2	100.0%	17.9	4.2	1.4
EB	Left Turn							
	Through	11	490	11	100.0%	79.5	11.3	162.3
	Right Turn							
	Subtotal	11	490	11	100.0%	79.5	11.3	162.3
WB	Left Turn							
	Through	12	58	12	100.0%	57.9	18.7	14.0
	Right Turn							
	Subtotal	12	58	12	100.0%	57.9	18.7	14.0
<b>Total</b>		<b>27</b>	<b>668</b>	<b>27</b>	<b>100.0%</b>	<b>57.3</b>	<b>6.6</b>	<b>177.7</b>

**Intersection 4                      Shields St/W Elizabeth St**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	101	2	100.0%	42.4	20.7	17.8
	Right Turn							
	Subtotal	2	101	2	100.0%	42.4	20.7	17.8
SB	Left Turn							
	Through	2	19	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	19	2	100.0%	0.0	0.0	0.0
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
<b>Total</b>		<b>4</b>	<b>120</b>	<b>4</b>	<b>100.0%</b>	<b>28.3</b>	<b>13.8</b>	<b>17.8</b>

# Transit

Vissim Post-Processor  
 Average Results from 10 Runs  
 Volume and Delay by Movement

Transit    AM Peak  
 TSM Alt

**Intersection 5                      Shields St/Lake St**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	243	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	243	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through	2	25	2	100.0%	4.3	4.5	0.5
	Right Turn							
	Subtotal	2	25	2	100.0%	4.3	4.5	0.5
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
<b>Total</b>		<b>4</b>	<b>268</b>	<b>4</b>	<b>100.0%</b>	<b>2.9</b>	<b>3.0</b>	<b>0.5</b>

**Intersection 6                      Shields St/Prospect**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	103	2	100.0%	53.3	8.2	22.9
	Right Turn							
	Subtotal	2	103	2	100.0%	53.3	8.2	22.9
SB	Left Turn							
	Through	2	25	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	25	2	100.0%	0.0	0.0	0.0
EB	Left Turn	2	139	2	100.0%	171.5	47.8	99.3
	Through							
	Right Turn							
	Subtotal		139					99.3
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
<b>Total</b>		<b>4</b>	<b>267</b>	<b>4</b>	<b>100.0%</b>	<b>35.5</b>	<b>5.5</b>	<b>122.2</b>

**Intersection 8                      City Park Ave/W Elizabeth St**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn	6	154	6	100.0%	30.4	10.8	19.5
	Subtotal	6	154	6	100.0%	30.4	10.8	19.5
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
<b>Total</b>		<b>6</b>	<b>154</b>	<b>6</b>	<b>100.0%</b>	<b>30.4</b>	<b>10.8</b>	<b>19.5</b>

# Transit

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Transit    AM Peak  
TSM Alt

## Intersection 9                      Constitution Ave/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn	6	12	6	100.0%	19.7	13.9	1.0
	Subtotal	6	12	6	100.0%	19.7	13.9	1.0
EB	Left Turn	5	196	5	100.0%	24.1	6.1	19.7
	Through							
	Right Turn							
	Subtotal	5	196	5	100.0%	24.1	6.1	19.7
WB	Left Turn							
	Through							
	Right Turn	6	198	6	100.0%	10.7	1.3	8.8
	Subtotal	6	198	6	100.0%	10.7	1.3	8.8
<b>Total</b>		<b>17</b>	<b>406</b>	<b>17</b>	<b>100.0%</b>	<b>18.7</b>	<b>5.6</b>	<b>29.5</b>

## Intersection 11                      Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	1	38	1	100.0%	18.6	2.4	2.9
	Right Turn							
	Subtotal		38					2.9
SB	Left Turn							
	Through	1	9	1	100.0%	12.9	1.5	0.5
	Right Turn							
	Subtotal		9					0.5
EB	Left Turn							
	Through	5	160	5	100.0%	88.3	17.8	58.9
	Right Turn							
	Subtotal	5	160	5	100.0%	88.3	17.8	58.9
WB	Left Turn							
	Through	6	29	6	100.0%	55.9	19.2	6.8
	Right Turn							
	Subtotal	6	29	6	100.0%	55.9	19.2	6.8
<b>Total</b>		<b>11</b>	<b>236</b>	<b>11</b>	<b>100.0%</b>	<b>76.2</b>	<b>12.2</b>	<b>69.1</b>

## Intersection 12                      Overland Trail/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through	6	26	6	100.0%	24.6	10.7	2.7
	Right Turn							
	Subtotal	6	26	6	100.0%	24.6	10.7	2.7
WB	Left Turn							
	Through	6	7	6	100.0%	71.6	36.3	2.1
	Right Turn							
	Subtotal	6	7	6	100.0%	71.6	36.3	2.1
<b>Total</b>		<b>12</b>	<b>33</b>	<b>12</b>	<b>100.0%</b>	<b>52.7</b>	<b>17.1</b>	<b>4.8</b>

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
Traffic Calming Alt  
AM Peak Hour

Intersection 2		Shields St/W Laurel St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	719	706	98.2%	6.0	2.1	A	78
	Through	413	405	98.1%	8.9	2.4	A	66
	Right Turn							
	Subtotal	1,132	1,111	98.2%	7.1	2.2	A	144
SB	Left Turn	130	132	101.5%	26.5	7.8	C	64
	Through	667	657	98.5%	11.1	1.2	B	134
	Right Turn							
	Subtotal	797	789	99.0%	13.5	2.0	B	198
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	128	123	96.3%	44.4	5.6	D	100
	Through							
	Right Turn	61	58	94.3%	9.7	1.7	A	10
	Subtotal	189	181	95.7%	33.7	4.5	C	111
Total		2,118	2,081	98.3%	11.6	1.6	B	453

Intersection 3		Shields St/W Plum St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	13	13	99.2%	4.4	3.2	A	1
	Through	1,064	1,045	98.2%	1.3	0.3	A	26
	Right Turn	37	38	101.9%	1.4	0.5	A	1
	Subtotal	1,114	1,096	98.4%	1.4	0.3	A	28
SB	Left Turn	13	10	74.6%	15.2	11.6	B	3
	Through	764	756	98.9%	5.5	0.9	A	76
	Right Turn	18	17	96.7%	3.2	2.6	A	1
	Subtotal	795	783	98.5%	5.6	0.9	A	80
EB	Left Turn	51	52	102.0%	51.2	9.4	D	49
	Through	25	37	149.6%	54.5	12.6	D	37
	Right Turn	34	32	93.5%	49.9	10.5	D	29
	Subtotal	110	121	110.2%	51.7	8.6	D	115
WB	Left Turn	17	17	99.4%	37.1	15.6	D	12
	Through	18	30	167.2%	41.8	8.9	D	23
	Right Turn	17	16	92.9%	7.8	4.6	A	2
	Subtotal	52	63	120.8%	33.9	8.5	C	37
Total		2,071	2,063	99.6%	7.8	1.0	A	259

Intersection 4		Shields St/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	140	143	102.0%	34.4	7.5	C	90
	Through	851	837	98.4%	12.7	2.1	B	194
	Right Turn	54	53	97.6%	11.2	1.8	B	11
	Subtotal	1,045	1,033	98.8%	15.6	2.1	B	295
SB	Left Turn	24	24	97.9%	32.7	14.7	C	14
	Through	653	646	99.0%	9.5	2.2	A	112
	Right Turn	138	135	98.0%	5.2	2.1	A	13
	Subtotal	815	805	98.8%	9.6	1.9	A	139
EB	Left Turn	258	257	99.5%	50.9	5.3	D	240
	Through	27	27	100.4%	49.7	7.0	D	25
	Right Turn	296	298	100.7%	46.1	3.5	D	252
	Subtotal	581	582	100.2%	48.4	3.2	D	516
WB	Left Turn	15	14	95.3%	36.7	25.8	D	10
	Through	5	4	86.0%	27.8	31.3	C	2
	Right Turn	5	5	96.0%	3.1	6.5	A	0
	Subtotal	25	23	93.6%	36.8	20.9	D	12
Total		2,466	2,443	99.1%	21.6	1.2	C	962

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
Traffic Calming Alt  
AM Peak Hour

Intersection 5		Shields St/Lake St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn							
	Through	1,178	1,187	100.8%	3.7	0.9	A	81
	Right Turn	154	148	96.4%	4.7	1.3	A	13
	Subtotal	1,332	1,336	100.3%	3.8	0.9	A	94
SB	Left Turn	123	120	97.8%	45.5	9.0	D	100
	Through	768	754	98.2%	8.1	1.4	A	112
	Right Turn							
	Subtotal	891	875	98.2%	13.3	2.7	B	212
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	61	63	103.6%	48.3	7.3	D	56
	Through							
	Right Turn	37	35	95.7%	4.8	1.2	A	3
	Subtotal	98	99	100.6%	33.6	5.1	C	59
Total		2,321	2,309	99.5%	8.6	1.4	A	365

Intersection 6		Shields St/Prospect			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	56	56	100.5%	24.7	6.5	C	26
	Through	946	941	99.4%	20.5	1.8	C	353
	Right Turn	136	129	95.0%	15.2	3.9	B	36
	Subtotal	1,138	1,126	99.0%	20.0	1.7	C	414
SB	Left Turn	145	149	102.8%	34.6	7.0	C	94
	Through	630	615	97.6%	4.2	1.4	A	48
	Right Turn	54	55	102.6%	1.8	0.4	A	2
	Subtotal	829	819	98.8%	10.0	2.4	B	144
EB	Left Turn	241	244	101.3%	128.8	29.6	F	577
	Through	713	716	100.5%	100.3	18.1	F	1318
	Right Turn	152	153	100.9%	64.5	19.0	E	181
	Subtotal	1,106	1,114	100.7%	101.3	17.9	F	2076
WB	Left Turn	71	69	96.6%	50.6	9.5	D	64
	Through	233	237	101.5%	42.7	1.5	D	185
	Right Turn	145	148	102.3%	30.6	4.1	C	83
	Subtotal	449	454	101.0%	40.0	1.9	D	332
Total		3,522	3,513	99.7%	48.6	6.3	D	2966

Intersection 8		City Park Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	24	23	96.7%	30.4	10.9	C	13
	Through	33	32	97.6%	26.9	6.4	C	16
	Right Turn	35	34	97.4%	8.9	3.5	A	6
	Subtotal	92	90	97.3%	21.1	4.6	C	34
SB	Left Turn	34	34	100.0%	39.3	9.1	D	25
	Through	32	31	97.5%	32.1	8.6	C	18
	Right Turn	18	22	123.9%	17.6	4.4	B	7
	Subtotal	84	88	104.2%	30.4	4.5	C	50
EB	Left Turn	53	56	106.2%	44.5	8.6	D	46
	Through	441	436	99.0%	12.6	4.2	B	101
	Right Turn	66	65	98.3%	8.6	4.3	A	10
	Subtotal	560	558	99.6%	15.3	4.1	B	157
WB	Left Turn	30	28	93.0%	35.2	4.3	D	18
	Through	160	158	98.4%	10.9	3.3	B	32
	Right Turn	45	45	100.4%	7.0	5.3	A	6
	Subtotal	235	231	98.1%	13.1	3.3	B	55
Total		971	965	99.4%	16.6	3.1	B	297



# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
Traffic Calming Alt  
AM Peak Hour

Intersection 9		Constitution Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	3	2	80.0%	11.8	14.3	B	1
	Through	4	4	100.0%	27.2	23.0	C	2
	Right Turn	20	18	89.5%	29.9	10.3	C	10
	Subtotal	27	24	90.0%	27.3	5.6	C	12
SB	Left Turn	36	37	101.4%	26.5	7.4	C	18
	Through	9	8	91.1%	22.1	17.5	C	3
	Right Turn	32	38	119.7%	27.4	6.1	C	19
	Subtotal	77	83	107.8%	27.1	3.9	C	40
EB	Left Turn	26	32	121.9%	40.1	14.2	D	23
	Through	499	497	99.6%	6.5	1.6	A	59
	Right Turn	5	6	114.0%	5.7	11.1	A	1
	Subtotal	530	535	100.9%	8.7	2.2	A	83
WB	Left Turn	2	2	100.0%	11.2	17.1	B	0
	Through	150	145	96.8%	8.0	2.6	A	21
	Right Turn	15	22	146.7%	7.0	1.9	A	3
	Subtotal	167	169	101.3%	8.0	2.3	A	24
Total		801	811	101.3%	12.0	1.7	B	160

Intersection 11		Taft Hill Rd/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	51	52	102.0%	34.0	17.3	C	32
	Through	739	720	97.4%	45.2	21.5	D	596
	Right Turn	111	110	99.4%	50.6	24.2	D	102
	Subtotal	901	882	97.9%	45.1	21.4	D	731
SB	Left Turn	91	89	97.4%	29.5	6.1	C	48
	Through	547	544	99.5%	21.8	2.7	C	217
	Right Turn	47	45	95.5%	25.3	7.6	C	21
	Subtotal	685	678	98.9%	23.0	2.8	C	286
EB	Left Turn	121	122	100.5%	70.4	32.2	E	157
	Through	239	244	102.0%	43.6	25.4	D	195
	Right Turn	153	154	100.3%	67.4	41.1	E	190
	Subtotal	513	519	101.1%	57.2	30.0	E	541
WB	Left Turn	100	96	95.6%	80.2	34.1	F	141
	Through	109	113	103.2%	26.1	4.1	C	54
	Right Turn	32	33	102.5%	37.1	9.4	D	22
	Subtotal	241	241	100.0%	49.8	14.4	D	217
Total		2,340	2,320	99.1%	43.1	13.0	D	1775

Intersection 12		Overland Trail/W Elizabeth St			Roundabout			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	4	4	105.0%	1.5	1.7	A	0
	Through	455	460	101.1%	4.6	0.7	A	38
	Right Turn	69	69	100.1%	4.4	1.2	A	6
	Subtotal	528	533	101.0%	4.5	0.8	A	44
SB	Left Turn	33	30	92.1%	2.5	0.7	A	1
	Through	272	282	103.7%	2.6	0.5	A	14
	Right Turn	10	8	75.0%	3.9	3.0	A	1
	Subtotal	315	320	101.6%	2.6	0.5	A	16
EB	Left Turn	11	13	119.1%	2.8	1.6	A	1
	Through	1	7	720.0%	4.4	3.3	A	1
	Right Turn	1	1	60.0%	0.6	1.2	A	0
	Subtotal	13	21	160.8%	3.5	1.6	A	1
WB	Left Turn	51	50	98.0%	8.1	2.5	A	7
	Through	4	10	240.0%	10.6	4.3	B	2
	Right Turn	65	65	99.5%	7.0	2.0	A	8
	Subtotal	120	124	103.6%	7.7	1.9	A	18
Total		976	999	102.3%	4.3	0.5	A	79

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle AM Peak  
Traffic Calming Alt

## Intersection 2 Shields St/W Laurel St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	10	11	111.0%	8.2	9.3	1.4
	Right Turn	5	5	98.0%	0.9	1.3	0.1
	Subtotal	15	16	106.7%	6.4	6.3	1.4
SB	Left Turn	15	10	69.3%	21.8	13.1	5.4
	Through	4	3	62.5%	2.0	4.3	0.1
	Right Turn						
	Subtotal	19	13	67.9%	17.7	9.7	5.6
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	5	4	84.0%	40.5	28.7	3.4
	Through						
	Right Turn						
	Subtotal	5	4	84.0%	40.5	28.7	3.4
Total		39	33	84.9%	16.7	6.8	10.4

## Intersection 3 Shields St/W Plum St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	14	15	103.6%	3.8	5.8	0.9
	Right Turn	5	5	102.0%	2.0	6.3	0.2
	Subtotal	19	20	103.2%	3.3	3.9	1.1
SB	Left Turn						
	Through	5	4	74.0%	0.2	0.5	0.0
	Right Turn	1	1	50.0%	0.0	0.0	0.0
	Subtotal	6	4	70.0%	0.2	0.5	0.0
EB	Left Turn	1	2	150.0%	6.1	18.7	0.1
	Through	140	136	97.1%	31.1	4.5	72.5
	Right Turn	2	2	115.0%	9.3	19.7	0.3
	Subtotal	143	140	97.7%	31.2	4.6	72.9
WB	Left Turn						
	Through	7	4	57.1%	45.4	32.7	5.3
	Right Turn	1	0	0.0%	0.0	0.0	0.0
	Subtotal	8	4	50.0%	45.4	32.7	5.3
Total		176	168	95.2%	28.23	4.9	79.28

## Intersection 4 Shields St/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	1	80.0%	4.0	9.4	0
	Through	6	15	241.7%	5.4	4.7	0.5
	Right Turn	9	9	101.1%	3.8	10.8	0.6
	Subtotal	16	24	152.5%	6.3	7.4	1.2
SB	Left Turn	4	4	110.0%	54.6	43.4	3.6
	Through	2	1	40.0%	2.9	9.1	0.1
	Right Turn	1	1	100.0%	0.0	0.0	0.0
	Subtotal	7	6	88.6%	53.2	40.5	3.7
EB	Left Turn	8	9	116.3%	49.1	26.4	6.5
	Through	112	104	92.4%	58.3	10.7	108.9
	Right Turn	2	2	110.0%	9.6	25.7	0.3
	Subtotal	122	115	94.3%	57.4	11.4	115.8
WB	Left Turn	3	3	86.7%	11.5	27.7	0.6
	Through	6	5	76.7%	30.8	30.9	3.1
	Right Turn	5	4	88.0%	4.5	8.6	0.4
	Subtotal	14	12	82.9%	25.0	17.3	4.0
Total		159	157	98.9%	46.9	9.0	124.7

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle AM Peak  
Traffic Calming Alt

## Intersection 5 Shields St/Lake St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	11	15	131.8%	5.4	4.7	1.0
	Right Turn	52	50	96.7%	0.3	0.5	0.3
	Subtotal	63	65	102.9%	1.3	0.9	1.3
SB	Left Turn	1	1	130.0%	14.4	33.4	0.2
	Through	6	5	75.0%	4.9	8.1	0.5
	Right Turn						
	Subtotal	7	6	82.9%	16.6	32.7	0.7
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	8	6	71.3%	47.6	24.5	6.3
	Through						
	Right Turn	7	6	88.6%	14.2	11.1	1.7
	Subtotal	15	12	79.3%	31.9	16.0	8.0
Total		85	83	97.1%	6.5	4.0	10.0

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	41	40	96.8%	14.0	4.9	9.5
	Right Turn						
	Subtotal	41	40	96.8%	14.0	4.9	9.5
SB	Left Turn	1	0	30.0%	5.4	17.0	0.1
	Through	13	10	75.4%	7.2	10.1	1.6
	Right Turn						
	Subtotal	14	10	72.1%	8.1	11.4	1.6
EB	Left Turn	22	22	99.5%	62.9	15.2	23.1
	Through	10	10	97.0%	33.7	26.6	5.6
	Right Turn	4	5	120.0%	6.4	8.8	0.4
	Subtotal	36	36	101.1%	50.2	14.4	29.1
WB	Left Turn						
	Through	1	0	0.0%	0.0	0.0	0.0
	Right Turn						
	Subtotal	1	0	0.0%	0.0	0.0	0.0
Total		92	86	93.7%	28.9	8.4	40.3

## Intersection 8 City Park Ave/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	6	6	101.7%	16.8	22.3	1.7
	Right Turn	21	22	103.3%	0.3	0.6	0.1
	Subtotal	27	28	103.0%	5.1	7.1	1.8
SB	Left Turn	6	5	90.0%	71.1	62.9	7.1
	Through	2	2	115.0%	44.2	69.9	1.5
	Right Turn						
	Subtotal	8	8	96.3%	77.8	54.7	8.6
EB	Left Turn	2	1	60.0%	0.0	0.0	0.0
	Through	93	96	103.4%	12.4	6.8	19.3
	Right Turn	2	1	60.0%	2.5	7.3	0.1
	Subtotal	97	99	101.6%	12.2	6.4	19.3
WB	Left Turn						
	Through	3	2	66.7%	0.0	0.0	0.0
	Right Turn	3	3	86.7%	0.0	0.0	0.0
	Subtotal	6	5	76.7%	0.0	0.0	0.0
Total		138	139	100.5%	16.5	8.2	29.7

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle AM Peak  
Traffic Calming Alt

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	1	80.0%	7.9	16.8	0
	Through	1	1	50.0%	0.0	0.0	0.0
	Right Turn	5	3	56.0%	3.0	3.8	0.3
	Subtotal	7	4	58.6%	5.7	7.8	0.4
SB	Left Turn	1	1	110.0%	1.2	3.9	0.0
	Through	1	1	50.0%	15.5	25.2	0.3
	Right Turn						
	Subtotal	2	2	80.0%	16.7	24.7	0.3
EB	Left Turn	1	0	0.0%	0.0	0.0	0.0
	Through	62	66	106.8%	9.7	5.7	10.0
	Right Turn						
	Subtotal	63	66	105.1%	9.7	5.7	10.0
WB	Left Turn						
	Through	3	2	60.0%	3.8	8.0	0.2
	Right Turn						
	Subtotal	3	2	60.0%	3.8	8.0	0.2
Total		75	74	98.3%	10.1	4.1	10.8

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	4	3	72.5%	26.6	23.2	1.8
	Right Turn	2	1	65.0%	16.0	22.8	0.5
	Subtotal	6	4	70.0%	30.2	22.7	2.3
SB	Left Turn	2	3	160.0%	6.9	10.5	0.2
	Through	1	1	80.0%	8.2	18.6	0.1
	Right Turn						
	Subtotal	3	4	133.3%	10.5	13.6	0.4
EB	Left Turn						
	Through	57	60	104.7%	39.2	9.0	37.3
	Right Turn						
	Subtotal	57	60	104.7%	39.2	9.0	37.3
WB	Left Turn	2	1	35.0%	6.9	14.7	0.2
	Through						
	Right Turn	1	1	50.0%	7.0	15.2	0.1
	Subtotal	3	1	40.0%	13.9	18.5	0.3
Total		69	69	100.1%	35.9	7.1	40.3

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	14	13	90.0%	0.9	1.0	0.2
	Right Turn						
	Subtotal	14	13	90.0%	0.9	1.0	0.2
SB	Left Turn						
	Through	5	4	84.0%	1.5	2.1	0.1
	Right Turn						
	Subtotal	5	4	84.0%	1.5	2.1	0.1
EB	Left Turn	1	1	60.0%	0.1	0.2	0.0
	Through						
	Right Turn						
	Subtotal	1	1	60.0%	0.1	0.2	0.0
WB	Left Turn	1	1	60.0%	0.1	0.4	0.0
	Through	1	0	0.0%	0.0	0.0	0.0
	Right Turn	3	5	163.3%	1.8	2.6	0.1
	Subtotal	5	6	110.0%	1.8	2.6	0.1
Total		25	23	91.6%	1.3	1.0	0.4

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk AM Peak  
Traffic Calming Alt

## Intersection 2 Shields St/W Laurel St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through						
	Right Turn	1	1	120.0%	4.1	10.8	
	Subtotal	1	1	120.0%	4.1	10.8	
SB	Left Turn	8	9	112.5%	42.8	22.1	
	Through						
	Right Turn						
	Subtotal	8	9	112.5%	42.8	22.1	
EB	Left Turn	26	26	100.0%	51.3	8.2	
	Through						
	Right Turn						
	Subtotal	26	26	100.0%	51.3	8.2	
WB	Left Turn						
	Through						
	Right Turn	2	2	90.0%	33.3	38.5	
	Subtotal	2	2	90.0%	33.3	38.5	
Total		37	38	102.7%	46.5	9.3	29.4

## Intersection 3 Shields St/W Plum St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side						
	East Side	4	4	90.0%	24.6	37.0	
	Subtotal	4	4	90.0%	24.6	37.0	
SB	East Side	4	3	85.0%	13.8	22.6	
	West Side	20	20	97.5%	53.1	16.2	
	Subtotal	24	23	95.4%	52.3	17.5	
EB	North Side	45	46	101.6%	55.4	14.3	
	South Side	31	29	93.5%	50.3	6.9	
	Subtotal	76	75	98.3%	52.6	8.7	
WB	South Side						
	North Side	2	2	90.0%	20.8	37.5	
	Subtotal	2	2	90.0%	20.8	37.5	
Total		106	103	97.2%	50.6	6.8	86.8

## Intersection 4 Shields St/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	90.0%	25.5	44.0	
	East Side	4	4	110.0%	52.6	39.8	
	Subtotal	5	5	106.0%	62.9	37.7	
SB	East Side	2	2	115.0%	32.2	41.7	
	West Side	2	2	95.0%	26.6	42.9	
	Subtotal	4	4	105.0%	51.5	42.6	
EB	North Side	28	28	100.7%	59.5	9.5	
	South Side	51	49	95.5%	48.1	11.5	
	Subtotal	79	77	97.3%	53.2	8.8	
WB	South Side						
	North Side	2	2	75.0%	8.1	17.8	
	Subtotal	2	2	75.0%	8.1	17.8	
Total		90	88	97.7%	52.7	8.9	77.1

## Intersection 5 Shields St/Lake St

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk AM Peak  
Traffic Calming Alt

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side						
	East Side	26	26	100.8%	42.3	15.6	
	Subtotal	26	26	100.8%	42.3	15.6	
SB	East Side						
	West Side						
	Subtotal						
EB	North Side	7	8	108.6%	45.5	27.7	
	South Side						
	Subtotal	7	8	108.6%	45.5	27.7	
WB	South Side						
	North Side	21	21	100.0%	51.9	11.0	
	Subtotal	21	21	100.0%	51.9	11.0	
Total		54	55	101.5%	46.4	9.8	42.4

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	16	16	100.6%	37.9	22.7	
	East Side	26	25	94.2%	110.5	85.0	
	Subtotal	42	41	96.7%	94.4	71.8	
SB	East Side						
	West Side	1	1	80.0%	5.2	16.5	
	Subtotal	1	1	80.0%	5.2	16.5	
EB	North Side	10	11	111.0%	65.4	30.9	
	South Side	11	12	105.5%	53.0	18.3	
	Subtotal	21	23	108.1%	61.2	17.2	
WB	South Side	4	5	125.0%	28.2	29.0	
	North Side						
	Subtotal	4	5	125.0%	28.2	29.0	
Total		68	69	101.6%	70.0	24.4	80.6

## Intersection 7 Ped Crossing/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side						
	East Side						
	Subtotal						
SB	East Side						
	West Side	1	1	80.0%	0.0	0.0	
	Subtotal	1	1	80.0%	0.0	0.0	
EB	North Side						
	South Side						
	Subtotal						
WB	South Side						
	North Side						
	Subtotal						
Total		1	1	80.0%	0.0	0.0	0.0

## Intersection 8 City Park Ave/W Elizabeth St

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk AM Peak  
Traffic Calming Alt

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	9	8	83.3%	36.8	24.6	
	East Side	1	1	90.0%	8.5	19.8	
	Subtotal	10	8	84.0%	45.3	17.5	
SB	East Side	4	5	135.0%	26.8	22.6	
	West Side	4	4	90.0%	26.6	28.0	
	Subtotal	8	9	112.5%	35.2	19.4	
EB	North Side	10	10	95.0%	28.3	12.7	
	South Side	5	6	122.0%	21.3	13.8	
	Subtotal	15	16	104.0%	28.4	10.9	
WB	South Side						
	North Side	10	10	95.0%	28.3	12.7	
	Subtotal	3	3	90.0%	19.2	29.5	
Total		36	36	99.2%	32.8	9.8	19.5

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	60.0%	1.9	6.2	
	East Side	3	3	96.7%	23.0	24.8	
	Subtotal	4	4	87.5%	21.9	23.5	
SB	East Side						
	West Side						
	Subtotal						
EB	North Side	3	4	133.3%	12.8	15.3	
	South Side	2	2	90.0%	0.9	3.0	
	Subtotal	5	6	116.0%	13.7	14.7	
WB	South Side						
	North Side						
	Subtotal						
Total		9	9	103.3%	19.1	16.6	3.0

## Intersection 10 Ped Signal/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side						
	East Side						
	Subtotal						
SB	East Side	2	2	105.0%	20.3	19.3	
	West Side						
	Subtotal	2	2	105.0%	20.3	19.3	
EB	North Side						
	South Side						
	Subtotal						
WB	South Side						
	North Side						
	Subtotal						
Total		2	2	105.0%	20.3	19.3	0.7

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)	Percent	Total Delay (sec/person)	Total Person Delay (min)
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# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk AM Peak  
Traffic Calming Alt

Direction	Movement	Volume (pph)	Average	Percent	Average	Std. Dev.	Delay (min)
NB	West Side						
	East Side	3	3	106.7%	19.7	26.4	
	Subtotal	3	3	106.7%	19.7	26.4	
SB	East Side	4	3	75.0%	30.4	32.5	
	West Side	3	3	83.3%	25.3	30.1	
	Subtotal	7	6	78.6%	33.3	22.4	
EB	North Side						
	South Side	6	8	128.3%	34.5	26.8	
	Subtotal	6	8	128.3%	34.5	26.8	
WB	South Side	1	0	0.0%	0.0	0.0	
	North Side						
	Subtotal	1	0	0.0%	0.0	0.0	
Total		17	16	96.5%	34.1	11.3	9.3

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	120.0%	0.0	0.0	
	East Side						
	Subtotal	1	1	120.0%	0.0	0.0	
SB	East Side	1	1	120.0%	0.0	0.0	
	West Side						
	Subtotal	1	1	120.0%	0.0	0.0	
EB	North Side						
	South Side						
	Subtotal						
WB	South Side						
	North Side						
	Subtotal						
Total		2	2	120.0%	0.0	0.0	0.0



Vissim Post-Processor  
 Average Results from 10 Runs  
 Volume and Delay by Movement

Transit AM Peak  
 Traffic Calming Alt

**Intersection 2 Shields St/W Laurel St**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn	2	101	2	100.0%	0.0	0.0	0.0
	Subtotal	2	101	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	2	19	2	100.0%	51.9	5.3	4.1
	Through							
	Right Turn							
	Subtotal	2	19	2	100.0%	51.9	5.3	4.1
Total		4	120	4	100.0%	34.6	3.6	4.1

**Intersection 3 Shields St/W Plum St**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn	2	101	2	100.0%	0.3	0.3	0.1
	Subtotal	2	101	2	100.0%	0.3	0.3	0.1
SB	Left Turn							
	Through	2	19	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	19	2	100.0%	0.0	0.0	0.0
EB	Left Turn							
	Through	11	490	11	100.0%	62.6	5.0	127.7
	Right Turn							
	Subtotal	11	490	11	100.0%	62.6	5.0	127.7
WB	Left Turn							
	Through	12	58	12	102.5%	50.5	5.7	12.2
	Right Turn							
	Subtotal	12	58	12	102.5%	50.5	5.7	12.2
Total		27	668	27	101.1%	43.1	3.7	140.1

**Intersection 4 Shields St/W Elizabeth St**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	101	2	100.0%	52.3	27.6	22.0
	Right Turn							
	Subtotal	2	101	2	100.0%	52.3	27.6	22.0
SB	Left Turn							
	Through	2	19	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	19	2	100.0%	0.0	0.0	0.0
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		4	120	4	100.0%	34.9	18.4	22.0

Vissim Post-Processor  
 Average Results from 10 Runs  
 Volume and Delay by Movement

Transit    AM Peak  
 Traffic Calming Alt

**Intersection 5                      Shields St/Lake St**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	243	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	243	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through	2	25	2	100.0%	6.6	9.2	0.7
	Right Turn							
	Subtotal	2	25	2	100.0%	6.6	9.2	0.7
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
<b>Total</b>		<b>4</b>	<b>268</b>	<b>4</b>	<b>100.0%</b>	<b>4.4</b>	<b>6.1</b>	<b>0.7</b>

**Intersection 6                      Shields St/Prospect**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	103	2	100.0%	45.6	6.0	19.6
	Right Turn							
	Subtotal	2	103	2	100.0%	45.6	6.0	19.6
SB	Left Turn							
	Through	2	25	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	25	2	100.0%	0.0	0.0	0.0
EB	Left Turn	2	139	2	100.0%	57.5	6.2	33.3
	Through							
	Right Turn							
	Subtotal		139					33.3
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
<b>Total</b>		<b>4</b>	<b>267</b>	<b>4</b>	<b>100.0%</b>	<b>30.4</b>	<b>4.0</b>	<b>52.8</b>

**Intersection 8                      City Park Ave/W Elizabeth St**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn	6	154	6	100.0%	25.6	6.4	16.5
	Subtotal	6	154	6	100.0%	25.6	6.4	16.5
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
<b>Total</b>		<b>6</b>	<b>154</b>	<b>6</b>	<b>100.0%</b>	<b>25.6</b>	<b>6.4</b>	<b>16.5</b>

Vissim Post-Processor  
 Average Results from 10 Runs  
 Volume and Delay by Movement

Transit AM Peak  
 Traffic Calming Alt

**Intersection 9 Constitution Ave/W Elizabeth St**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn	6	12	6	98.3%	16.8	20.5	0.8
	Subtotal	6	12	6	98.3%	16.8	20.5	0.8
EB	Left Turn	5	196	5	100.0%	41.2	19.9	33.7
	Through							
	Right Turn							
	Subtotal	5	196	5	100.0%	41.2	19.9	33.7
WB	Left Turn							
	Through							
	Right Turn	6	198	6	100.0%	12.8	3.2	10.6
	Subtotal	6	198	6	100.0%	12.8	3.2	10.6
<b>Total</b>		<b>17</b>	<b>406</b>	<b>17</b>	<b>99.4%</b>	<b>22.0</b>	<b>6.6</b>	<b>45.1</b>

**Intersection 11 Taft Hill Rd/W Elizabeth St**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	1	38	1	100.0%	45.2	21.5	7.2
	Right Turn							
	Subtotal	1	38	0	0.0%	0.0	0.0	7.2
SB	Left Turn							
	Through	1	9	1	100.0%	21.8	2.7	0.8
	Right Turn							
	Subtotal	1	9	0	0.0%	0.0	0.0	0.8
EB	Left Turn							
	Through	5	160	5	100.0%	68.5	17.3	45.7
	Right Turn							
	Subtotal	5	160	5	100.0%	68.5	17.3	45.7
WB	Left Turn							
	Through	6	29	6	100.0%	47.6	15.9	5.8
	Right Turn							
	Subtotal	6	29	6	100.0%	47.6	15.9	5.8
<b>Total</b>		<b>13</b>	<b>236</b>	<b>11</b>	<b>84.6%</b>	<b>51.6</b>	<b>13.1</b>	<b>59.4</b>

**Intersection 12 Overland Trail/W Elizabeth St**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through	6	26	6	100.0%	7.8	5.5	0.8
	Right Turn							
	Subtotal	6	26	6	100.0%	7.8	5.5	0.8
WB	Left Turn							
	Through	6	7	6	100.0%	14.2	11.4	0.4
	Right Turn							
	Subtotal	6	7	6	100.0%	14.2	11.4	0.4
<b>Total</b>		<b>12</b>	<b>33</b>	<b>12</b>	<b>100.0%</b>	<b>11.0</b>	<b>5.8</b>	<b>1.3</b>

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
MAX Alt  
AM Peak Hour

Intersection 2		Shields St/W Laurel St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn							
	Through	719	701	97.5%	3.4	1.3	A	44
	Right Turn	413	404	97.8%	5.8	2.1	A	43
	Subtotal	1,132	1,105	97.6%	4.3	1.6	A	87
SB	Left Turn	130	132	101.5%	18.7	2.1	B	45
	Through	667	656	98.4%	10.4	1.4	B	125
	Right Turn							
	Subtotal	797	788	98.9%	11.8	1.5	B	171
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	128	123	96.3%	44.4	4.8	D	100
	Through							
	Right Turn	61	59	96.6%	9.5	1.7	A	10
	Subtotal	189	182	96.3%	33.4	3.8	C	111
Total		2,118	2,075	98.0%	11.1	0.7	B	368

Intersection 3		Shields St/W Plum St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	13	12	93.8%	5.7	4.9	A	1
	Through	1,064	1,041	97.9%	1.3	0.1	A	25
	Right Turn	37	43	115.9%	1.2	0.4	A	1
	Subtotal	1,114	1,096	98.4%	1.4	0.1	A	27
SB	Left Turn	13	10	76.2%	18.9	14.4	B	3
	Through	764	755	98.9%	5.6	0.9	A	78
	Right Turn	18	17	92.8%	5.1	4.5	A	2
	Subtotal	795	782	98.4%	5.9	1.0	A	83
EB	Left Turn	51	52	101.6%	49.5	9.1	D	47
	Through	25	32	126.8%	56.6	11.1	E	33
	Right Turn	34	33	97.9%	52.5	7.7	D	32
	Subtotal	110	117	106.2%	52.0	7.9	D	112
WB	Left Turn	17	29	169.4%	52.4	7.6	D	28
	Through	18	17	95.6%	31.8	16.8	C	10
	Right Turn	17	17	98.2%	12.6	7.3	B	4
	Subtotal	52	63	120.6%	37.3	6.7	D	42
Total		2,071	2,058	99.4%	8.2	0.8	A	264

Intersection 4		Shields St/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	140	143	101.9%	36.5	8.0	D	95
	Through	851	836	98.3%	12.7	1.5	B	194
	Right Turn	54	53	98.0%	11.7	2.1	B	11
	Subtotal	1,045	1,032	98.7%	15.9	1.6	B	301
SB	Left Turn	24	23	96.3%	40.1	20.8	D	17
	Through	653	644	98.6%	9.1	2.2	A	107
	Right Turn	138	151	109.1%	5.9	2.1	A	16
	Subtotal	815	817	100.3%	9.6	2.2	A	141
EB	Left Turn	258	259	100.5%	51.8	8.0	D	246
	Through	27	29	107.8%	52.9	12.4	D	28
	Right Turn	296	295	99.7%	49.9	5.5	D	270
	Subtotal	581	583	100.4%	50.9	5.9	D	544
WB	Left Turn	15	15	98.7%	31.6	23.0	C	9
	Through	5	4	84.0%	29.9	32.0	C	2
	Right Turn	5	4	82.0%	3.5	6.4	A	0
	Subtotal	25	23	92.4%	34.1	18.3	C	11
Total		2,466	2,455	99.6%	22.3	2.2	C	997

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
MAX Alt  
AM Peak Hour

Intersection 5		Shields St/Lake St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn							
	Through	1,178	1,187	100.7%	3.7	0.9	A	80
	Right Turn	154	150	97.1%	4.4	1.3	A	12
	Subtotal	1,332	1,336	100.3%	3.7	0.9	A	92
SB	Left Turn	123	122	99.5%	48.1	9.0	D	108
	Through	768	747	97.3%	8.9	1.5	A	122
	Right Turn							
	Subtotal	891	870	97.6%	14.4	2.7	B	230
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	61	61	100.7%	46.0	8.6	D	52
	Through							
	Right Turn	37	37	101.1%	4.9	1.3	A	3
	Subtotal	98	99	100.8%	30.0	7.1	C	55
Total		2,321	2,305	99.3%	8.7	1.4	A	377

Intersection 6		Shields St/Prospect			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	56	59	105.5%	24.0	8.0	C	26
	Through	946	938	99.2%	19.9	2.5	B	343
	Right Turn	136	131	96.5%	13.8	4.5	B	33
	Subtotal	1,138	1,129	99.2%	19.5	2.3	B	402
SB	Left Turn	145	145	99.9%	32.5	9.1	C	86
	Through	630	610	96.8%	5.2	1.6	A	58
	Right Turn	54	54	99.3%	2.0	0.6	A	2
	Subtotal	829	808	97.5%	10.2	2.7	B	146
EB	Left Turn	241	244	101.0%	131.0	28.1	F	585
	Through	713	717	100.6%	103.4	17.7	F	1360
	Right Turn	152	154	101.4%	71.5	17.9	E	202
	Subtotal	1,106	1,115	100.8%	104.6	17.9	F	2146
WB	Left Turn	71	71	100.3%	51.6	9.5	D	67
	Through	233	235	101.0%	43.4	1.8	D	187
	Right Turn	145	147	101.7%	33.2	5.2	C	90
	Subtotal	449	454	101.1%	41.2	2.4	D	344
Total		3,522	3,506	99.5%	50.2	7.3	D	3039

Intersection 8		City Park Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	24	24	101.7%	24.4	5.6	C	11
	Through	33	31	92.4%	26.6	5.2	C	15
	Right Turn	35	35	99.4%	29.4	7.6	C	19
	Subtotal	92	90	97.5%	27.2	4.1	C	45
SB	Left Turn	34	32	94.4%	27.3	5.3	C	16
	Through	32	31	97.5%	25.9	5.9	C	15
	Right Turn	18	15	81.1%	24.9	13.5	C	7
	Subtotal	84	78	92.7%	26.6	4.0	C	38
EB	Left Turn	53	54	101.3%	46.7	8.4	D	46
	Through	441	433	98.3%	16.5	5.0	B	131
	Right Turn	66	66	99.8%	7.6	2.4	A	9
	Subtotal	560	553	98.7%	18.4	5.1	B	186
WB	Left Turn	30	29	97.3%	35.2	6.5	D	19
	Through	160	157	98.4%	10.3	3.2	B	30
	Right Turn	45	47	103.6%	6.0	1.8	A	5
	Subtotal	235	233	99.2%	13.3	3.2	B	54
Total		971	954	98.2%	18.8	3.4	B	322

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
MAX Alt  
AM Peak Hour

Intersection 9		Constitution Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	3	3	83.3%	13.7	13.9	B	1
	Through	4	4	102.5%	18.3	14.0	B	1
	Right Turn	20	18	90.0%	21.9	8.0	C	7
	Subtotal	27	25	91.1%	21.5	8.5	C	9
SB	Left Turn	36	35	97.8%	24.1	5.9	C	16
	Through	9	9	95.6%	17.3	10.3	B	3
	Right Turn	32	33	102.2%	26.5	7.1	C	16
	Subtotal	77	77	99.4%	25.2	4.3	C	34
EB	Left Turn	26	26	98.8%	32.9	7.0	C	16
	Through	499	500	100.2%	6.4	1.4	A	58
	Right Turn	5	6	128.0%	5.6	6.7	A	1
	Subtotal	530	532	100.4%	7.7	1.6	A	75
WB	Left Turn	2	2	95.0%	9.7	12.6	A	0
	Through	150	145	96.7%	5.1	2.0	A	14
	Right Turn	15	21	140.0%	8.6	3.6	A	3
	Subtotal	167	168	100.6%	5.6	1.7	A	17
Total		801	801	100.0%	10.2	1.4	B	135

Intersection 11		Taft Hill Rd/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	51	51	100.2%	38.8	20.3	D	36
	Through	739	729	98.7%	44.4	19.8	D	594
	Right Turn	111	111	100.1%	52.2	22.6	D	106
	Subtotal	901	892	99.0%	45.0	20.0	D	736
SB	Left Turn	91	89	98.2%	31.7	7.1	C	52
	Through	547	539	98.6%	21.9	3.3	C	216
	Right Turn	47	44	94.3%	25.4	8.5	C	21
	Subtotal	685	673	98.2%	23.6	3.2	C	289
EB	Left Turn	121	122	100.4%	75.1	30.6	E	167
	Through	239	241	100.9%	44.8	27.5	D	198
	Right Turn	153	153	100.2%	66.3	38.0	E	186
	Subtotal	513	516	100.6%	58.5	30.3	E	551
WB	Left Turn	100	93	93.4%	84.7	38.1	F	145
	Through	109	114	104.2%	25.0	3.7	C	52
	Right Turn	32	34	105.9%	39.1	10.6	D	24
	Subtotal	241	241	100.0%	51.1	15.1	D	221
Total		2,340	2,321	99.2%	43.7	13.2	D	1798

Intersection 12		Overland Trail/W Elizabeth St			Roundabout			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	4	4	105.0%	1.6	1.7	A	0
	Through	455	463	101.8%	4.8	0.7	A	41
	Right Turn	69	66	95.8%	4.3	1.1	A	5
	Subtotal	528	534	101.1%	4.8	0.7	A	46
SB	Left Turn	33	29	89.1%	3.2	0.9	A	2
	Through	272	281	103.2%	2.7	0.4	A	14
	Right Turn	10	7	73.0%	4.6	3.8	A	1
	Subtotal	315	317	100.7%	2.8	0.3	A	16
EB	Left Turn	11	13	116.4%	3.3	1.8	A	1
	Through	1	7	720.0%	5.5	2.9	A	1
	Right Turn	1	1	60.0%	0.4	1.1	A	0
	Subtotal	13	21	158.5%	4.4	1.7	A	2
WB	Left Turn	51	50	98.4%	8.0	1.3	A	7
	Through	4	10	252.5%	9.7	5.9	A	2
	Right Turn	65	65	99.8%	7.9	1.5	A	9
	Subtotal	120	125	104.3%	8.1	1.1	A	19
Total		976	997	102.1%	4.6	0.4	A	83

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle AM Peak  
MAX Alt

## Intersection 2 Shields St/W Laurel St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	10	11	109.0%	21.0	15.8	3.5
	Right Turn	5	4	86.0%	1.2	1.6	0.1
	Subtotal	15	15	101.3%	16.5	15.6	3.6
SB	Left Turn	15	11	74.0%	12.5	10.8	3.1
	Through	4	2	57.5%	1.8	3.9	0.1
	Right Turn						
	Subtotal	19	13	70.5%	11.6	10.0	3.3
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	5	4	78.0%	29.3	29.8	2.4
	Through						
	Right Turn						
	Subtotal	5	4	78.0%	29.3	29.8	2.4
Total		39	33	83.3%	16.5	9.9	9.3

## Intersection 3 Shields St/W Plum St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	14	14	99.3%	3.3	4.8	0.8
	Right Turn	5	6	114.0%	0.5	1.6	0.0
	Subtotal	19	20	103.2%	3.1	4.3	0.8
SB	Left Turn						
	Through	5	3	64.0%	0.1	0.2	0.0
	Right Turn	1	1	70.0%	0.1	0.3	0.0
	Subtotal	6	4	65.0%	0.2	0.4	0.0
EB	Left Turn	1	1	140.0%	9.9	21.6	0.2
	Through	140	136	97.1%	31.5	3.1	73.6
	Right Turn	2	2	115.0%	17.1	28.7	0.6
	Subtotal	143	140	97.7%	31.8	3.4	74.3
WB	Left Turn						
	Through	7	4	55.7%	34.6	33.3	4.0
	Right Turn	1	0	0.0%	0.0	0.0	0.0
	Subtotal	8	4	48.8%	34.6	33.3	4.0
Total		176	167	94.9%	28.23	3.4	79.15

## Intersection 4 Shields St/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	1	80.0%	5.2	13.1	0
	Through	6	14	231.7%	3.7	2.9	0.4
	Right Turn	9	9	96.7%	3.7	10.8	0.5
	Subtotal	16	23	146.3%	5.5	7.2	1.0
SB	Left Turn	4	4	102.5%	58.2	47.9	3.9
	Through	2	1	30.0%	5.8	18.4	0.2
	Right Turn	1	1	100.0%	0.2	0.5	0.0
	Subtotal	7	6	81.4%	59.9	44.0	4.1
EB	Left Turn	8	9	117.5%	46.6	24.3	6.2
	Through	112	104	93.0%	58.2	8.7	108.7
	Right Turn	2	2	120.0%	13.8	27.1	0.5
	Subtotal	122	116	95.1%	57.5	8.2	115.4
WB	Left Turn	3	3	86.7%	15.2	29.6	0.8
	Through	6	4	71.7%	23.7	31.3	2.4
	Right Turn	5	5	94.0%	4.9	8.5	0.4
	Subtotal	14	12	82.9%	22.0	17.4	3.5
Total		159	157	98.6%	46.6	7.1	124.0

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle AM Peak  
MAX Alt

## Intersection 5 Shields St/Lake St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	11	14	126.4%	3.3	4.8	0.6
	Right Turn	52	50	96.2%	1.0	1.1	0.9
	Subtotal	63	64	101.4%	1.5	1.7	1.5
SB	Left Turn	1	1	120.0%	2.2	7.1	0.0
	Through	6	5	75.0%	5.1	7.2	0.5
	Right Turn						
	Subtotal	7	6	81.4%	7.3	8.8	0.5
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	8	6	76.3%	37.1	23.2	4.9
	Through						
	Right Turn	7	6	84.3%	10.5	13.3	1.2
	Subtotal	15	12	80.0%	34.3	18.6	6.2
Total		85	82	96.0%	7.4	3.0	8.2

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	41	40	97.1%	18.8	8.9	12.9
	Right Turn						
	Subtotal	41	40	97.1%	18.8	8.9	12.9
SB	Left Turn	1	1	60.0%	5.8	12.7	0.1
	Through	13	10	73.8%	12.3	16.2	2.7
	Right Turn						
	Subtotal	14	10	72.9%	13.3	15.8	2.8
EB	Left Turn	22	21	95.9%	49.8	15.3	18.3
	Through	10	9	94.0%	28.3	27.5	4.7
	Right Turn	4	5	127.5%	6.8	7.6	0.5
	Subtotal	36	36	98.9%	40.8	7.5	23.4
WB	Left Turn						
	Through	1	0	0.0%	0.0	0.0	0.0
	Right Turn						
	Subtotal	1	0	0.0%	0.0	0.0	0.0
Total		92	86	93.0%	26.4	7.5	39.1

## Intersection 8 City Park Ave/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	6	6	100.0%	34.4	25.3	3.4
	Right Turn	21	22	103.8%	23.9	12.2	8.4
	Subtotal	27	28	103.0%	28.6	8.9	11.8
SB	Left Turn	6	5	81.7%	19.7	23.1	2.0
	Through	2	2	110.0%	4.0	7.3	0.1
	Right Turn						
	Subtotal	8	7	88.8%	17.0	18.5	2.1
EB	Left Turn	2	1	65.0%	9.1	14.1	0.3
	Through	93	94	100.9%	13.4	4.9	20.8
	Right Turn	2	1	55.0%	6.1	19.1	0.2
	Subtotal	97	96	99.2%	13.7	5.0	21.3
WB	Left Turn						
	Through	3	2	80.0%	4.9	10.0	0.2
	Right Turn	3	3	83.3%	3.4	6.7	0.2
	Subtotal	6	5	81.7%	6.1	10.1	0.4
Total		138	136	98.6%	17.8	2.7	35.7



# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle AM Peak  
MAX Alt

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	1	70.0%	3.3	10.5	0
	Through	1	1	60.0%	4.9	12.6	0.1
	Right Turn	5	3	58.0%	2.8	3.6	0.2
	Subtotal	7	4	60.0%	5.9	7.7	0.4
SB	Left Turn	1	1	110.0%	1.4	4.4	0.0
	Through	1	0	40.0%	13.9	22.5	0.2
	Right Turn						
	Subtotal	2	2	75.0%	15.3	22.0	0.3
EB	Left Turn	1	0	0.0%	0.0	0.0	0.0
	Through	62	62	99.8%	8.8	5.4	9.1
	Right Turn						
	Subtotal	63	62	98.3%	8.8	5.4	9.1
WB	Left Turn						
	Through	3	2	73.3%	1.8	5.7	0.1
	Right Turn						
	Subtotal	3	2	73.3%	1.8	5.7	0.1
Total		75	70	93.1%	9.3	4.2	9.8

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	4	4	90.0%	15.3	23.6	1.0
	Right Turn	2	1	65.0%	2.1	5.5	0.1
	Subtotal	6	5	81.7%	12.1	15.2	1.1
SB	Left Turn	2	3	135.0%	1.4	4.5	0.0
	Through	1	1	50.0%	3.7	9.6	0.1
	Right Turn						
	Subtotal	3	3	106.7%	3.1	8.0	0.1
EB	Left Turn						
	Through	57	56	98.9%	40.0	5.1	38.0
	Right Turn						
	Subtotal	57	56	98.9%	40.0	5.1	38.0
WB	Left Turn	2	1	30.0%	10.5	33.3	0.4
	Through						
	Right Turn	1	0	40.0%	7.2	22.9	0.1
	Subtotal	3	1	33.3%	17.8	38.2	0.5
Total		69	66	94.9%	33.9	4.1	39.6

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	14	14	100.7%	0.5	0.7	0.1
	Right Turn						
	Subtotal	14	14	100.7%	0.5	0.7	0.1
SB	Left Turn						
	Through	5	4	86.0%	0.3	0.6	0.0
	Right Turn						
	Subtotal	5	4	86.0%	0.3	0.6	0.0
EB	Left Turn	1	1	90.0%	0.1	0.2	0.0
	Through						
	Right Turn						
	Subtotal	1	1	90.0%	0.1	0.2	0.0
WB	Left Turn	1	1	60.0%	0.1	0.2	0.0
	Through	1	0	0.0%	0.0	0.0	0.0
	Right Turn	3	4	136.7%	1.1	1.7	0.1
	Subtotal	5	5	94.0%	1.1	1.7	0.1
Total		25	24	96.0%	0.8	1.0	0.2

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk AM Peak  
MAX Alt

## Intersection 2 Shields St/W Laurel St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through						
	Right Turn	1	1	100.0%	4.7	12.2	
	Subtotal	1	1	100.0%	4.7	12.2	
SB	Left Turn	8	8	101.3%	32.6	21.5	
	Through						
	Right Turn						
	Subtotal	8	8	101.3%	32.6	21.5	
EB	Left Turn	26	26	99.2%	49.9	13.8	
	Through						
	Right Turn						
	Subtotal	26	26	99.2%	49.9	13.8	
WB	Left Turn						
	Through						
	Right Turn	2	2	105.0%	74.2	157.9	
	Subtotal	2	2	105.0%	74.2	157.9	
Total		37	37	100.0%	48.5	18.7	29.9

## Intersection 3 Shields St/W Plum St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side						
	East Side	4	3	85.0%	20.0	34.7	
	Subtotal	4	3	85.0%	20.0	34.7	
SB	East Side	4	4	95.0%	22.2	23.7	
	West Side	20	19	95.0%	56.7	15.5	
	Subtotal	24	23	95.0%	55.4	14.0	
EB	North Side	45	46	101.6%	50.4	4.8	
	South Side	31	30	95.8%	54.3	9.4	
	Subtotal	76	75	99.2%	51.7	5.6	
WB	South Side						
	North Side	2	2	100.0%	29.6	42.2	
	Subtotal	2	2	100.0%	29.6	42.2	
Total		106	104	97.7%	51.1	5.0	88.2

## Intersection 4 Shields St/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	90.0%	14.0	31.8	
	East Side	4	4	95.0%	32.3	41.9	
	Subtotal	5	5	94.0%	43.4	43.6	
SB	East Side	2	2	110.0%	29.2	42.0	
	West Side	2	2	90.0%	18.1	38.3	
	Subtotal	4	4	100.0%	40.0	44.8	
EB	North Side	28	27	96.1%	58.2	8.6	
	South Side	51	49	95.5%	45.9	12.9	
	Subtotal	79	76	95.7%	51.0	8.3	
WB	South Side						
	North Side	2	2	85.0%	11.2	19.0	
	Subtotal	2	2	85.0%	11.2	19.0	
Total		90	86	95.6%	49.2	8.9	70.5

## Intersection 5 Shields St/Lake St

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk AM Peak  
MAX Alt

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side						
	East Side	26	26	100.8%	37.4	8.5	
	Subtotal	26	26	100.8%	37.4	8.5	
SB	East Side						
	West Side						
	Subtotal						
EB	North Side	7	7	95.7%	41.7	35.0	
	South Side						
	Subtotal	7	7	95.7%	41.7	35.0	
WB	South Side						
	North Side	21	21	101.4%	62.0	21.8	
	Subtotal	21	21	101.4%	62.0	21.8	
Total		54	54	100.4%	47.0	5.9	42.5

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	16	16	96.9%	37.0	18.0	
	East Side	26	25	94.2%	124.2	86.3	
	Subtotal	42	40	95.2%	99.7	73.1	
SB	East Side						
	West Side	1	1	90.0%	5.2	16.3	
	Subtotal	1	1	90.0%	5.2	16.3	
EB	North Side	10	11	106.0%	49.4	16.3	
	South Side	11	12	110.0%	53.1	20.6	
	Subtotal	21	23	108.1%	54.4	9.5	
WB	South Side	4	5	122.5%	34.0	30.5	
	North Side						
	Subtotal	4	5	122.5%	34.0	30.5	
Total		68	69	100.7%	68.4	23.5	78.1

## Intersection 7 Ped Crossing/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side						
	East Side						
	Subtotal						
SB	East Side						
	West Side	1	1	70.0%	0.0	0.0	
	Subtotal	1	1	70.0%	0.0	0.0	
EB	North Side						
	South Side						
	Subtotal						
WB	South Side						
	North Side						
	Subtotal						
Total		1	1	70.0%	0.0	0.0	0.0

## Intersection 8 City Park Ave/W Elizabeth St

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk AM Peak  
MAX AIT

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	9	7	82.2%	45.6	23.0	
	East Side	1	1	130.0%	7.2	18.3	
	Subtotal	10	9	87.0%	49.5	17.7	
SB	East Side	4	5	112.5%	24.6	18.5	
	West Side	4	4	92.5%	26.7	26.0	
	Subtotal	8	8	102.5%	31.7	14.7	
EB	North Side	10	10	96.0%	35.0	24.8	
	South Side	5	6	114.0%	12.8	16.7	
	Subtotal	15	15	102.0%	28.3	18.9	
WB	South Side						
	North Side	10	10	96.0%	35.0	24.8	
	Subtotal	3	3	103.3%	19.6	27.1	
Total		36	35	98.1%	34.9	10.9	20.5

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	60.0%	5.1	16.2	
	East Side	3	3	90.0%	19.3	25.1	
	Subtotal	4	3	82.5%	19.4	25.1	
SB	East Side						
	West Side						
	Subtotal						
EB	North Side	3	4	120.0%	6.1	11.6	
	South Side	2	2	95.0%	3.0	8.3	
	Subtotal	5	6	110.0%	9.1	12.8	
WB	South Side						
	North Side						
	Subtotal						
Total		9	9	97.8%	15.9	14.0	2.3

## Intersection 10 Ped Signal/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side						
	East Side						
	Subtotal						
SB	East Side	2	2	95.0%	15.4	17.3	
	West Side						
	Subtotal	2	2	95.0%	15.4	17.3	
EB	North Side						
	South Side						
	Subtotal						
WB	South Side						
	North Side						
	Subtotal						
Total		2	2	95.0%	15.4	17.3	0.5

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)	Percent	Total Delay (sec/person)	Total Person Delay (min)
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# Pedestrians

Vissim Post-Processor  
 Average Results from 10 Runs  
 Volume and Delay by Movement

Crosswalk AM Peak  
 MAX Alt

Direction	Movement	Volume (pph)	Average	Percent	Average	Std. Dev.	Delay (min)
NB	West Side						
	East Side	3	3	103.3%	21.2	25.7	
	Subtotal	3	3	103.3%	21.2	25.7	
SB	East Side	4	3	85.0%	27.6	33.8	
	West Side	3	3	83.3%	21.2	29.5	
	Subtotal	7	6	84.3%	30.7	24.5	
EB	North Side						
	South Side	6	7	113.3%	40.4	27.4	
	Subtotal	6	7	113.3%	40.4	27.4	
WB	South Side	1	0	0.0%	0.0	0.0	
	North Side						
	Subtotal	1	0	0.0%	0.0	0.0	
Total		17	16	92.9%	34.6	12.1	9.1

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	130.0%	0.0	0.0	
	East Side						
	Subtotal	1	1	130.0%	0.0	0.0	
SB	East Side	1	1	100.0%	0.0	0.0	
	West Side						
	Subtotal	1	1	100.0%	0.0	0.0	
EB	North Side						
	South Side						
	Subtotal						
WB	South Side						
	North Side						
	Subtotal						
Total		2	2	115.0%	0.0	0.0	0.0

# Transit

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Transit      AM Peak  
MAX Alt

## Intersection 2      Shields St/W Laurel St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn	2	101	2	100.0%	0.0	0.0	0.0
	Subtotal	2	101	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	2	19	2	100.0%	51.5	5.7	4.1
	Through							
	Right Turn							
	Subtotal	2	19	2	100.0%	51.5	5.7	4.1
Total		4	120	4	100.0%	34.4	3.8	4.1

## Intersection 3      Shields St/W Plum St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn	2	101	2	100.0%	0.5	0.9	0.2
	Through							
	Right Turn	5	205	5	100.0%	0.0	0.0	0.0
	Subtotal	7	306	7	100.0%	0.5	0.9	0.2
SB	Left Turn	2	19	2	100.0%	0.0	0.0	0.0
	Through							
	Right Turn							
	Subtotal	2	19	2	100.0%	0.0	0.0	0.0
EB	Left Turn	6	490	6	100.0%	64.0	4.8	130.8
	Through							
	Right Turn							
	Subtotal	6	490	6	100.0%	64.0	4.8	130.8
WB	Left Turn	12	58	12	102.5%	61.2	5.6	14.8
	Through							
	Right Turn							
	Subtotal	12	58	12	102.5%	61.2	5.6	14.8
Total		27	873	27	101.1%	48.7	4.3	145.7

## Intersection 4      Shields St/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	101	2	100.0%	48.0	28.6	20.2
	Right Turn							
	Subtotal	2	101	2	100.0%	48.0	28.6	20.2
SB	Left Turn							
	Through	2	19	2	100.0%	0.0	0.0	0.0
	Right Turn	12	16	12	102.5%	4.9	3.3	0.3
	Subtotal	14	35	14	102.1%	4.9	3.3	0.3
EB	Left Turn	5	205	5	100.0%	66.8	26.3	57.0
	Through							
	Right Turn							
	Subtotal	5	205	5	100.0%	66.8	26.3	57.0
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		21	341	21	101.4%	24.0	9.0	77.6

# Transit

Vissim Post-Processor  
 Average Results from 10 Runs  
 Volume and Delay by Movement

Transit      AM Peak  
 MAX Alt

## Intersection 5                      Shields St/Lake St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	243	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	243	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through	2	25	2	100.0%	6.6	7.3	0.7
	Right Turn							
	Subtotal	2	25	2	100.0%	6.6	7.3	0.7
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		4	268	4	100.0%	4.4	4.9	0.7

## Intersection 6                      Shields St/Prospect

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	103	2	100.0%	43.6	5.7	18.7
	Right Turn							
	Subtotal	2	103	2	100.0%	43.6	5.7	18.7
SB	Left Turn							
	Through	2	25	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	25	2	100.0%	0.0	0.0	0.0
EB	Left Turn	2	139	2	100.0%	57.5	6.2	33.3
	Through							
	Right Turn							
	Subtotal		139					33.3
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		4	267	4	100.0%	29.1	3.8	52.0

## Intersection 8                      City Park Ave/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through	5	355	5	100.0%	22.4	6.8	33.1
	Right Turn							
	Subtotal	5	355	5	100.0%	22.4	6.8	33.1
WB	Left Turn							
	Through	12	16	12	98.3%	21.7	6.2	1.4
	Right Turn							
	Subtotal	12	16	12	98.3%	21.7	6.2	1.4
Total		17	371	17	98.8%	22.0	4.0	34.5

# Transit

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Transit      AM Peak  
MAX Alt

## Intersection 9      Constitution Ave/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through	5	196	5	100.0%	30.1	10.1	24.6
	Right Turn							
	Subtotal	5	196	5	100.0%	30.1	10.1	24.6
WB	Left Turn							
	Through	6	12	6	100.0%	13.1	3.3	0.7
	Right Turn	6	198	6	100.0%	13.5	2.3	11.2
	Subtotal	12	210	12	100.0%	13.4	1.9	11.8
Total		17	406	17	100.0%	18.6	3.0	36.4

## Intersection 11      Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	1	38	1	100.0%	44.4	19.8	7.0
	Right Turn							
	Subtotal	1	38	0	0.0%	0.0	0.0	7.0
SB	Left Turn							
	Through	1	9	1	100.0%	21.9	3.3	0.8
	Right Turn							
	Subtotal	1	9	0	0.0%	0.0	0.0	0.8
EB	Left Turn							
	Through	5	160	5	100.0%	72.1	25.6	48.1
	Right Turn							
	Subtotal	5	160	5	100.0%	72.1	25.6	48.1
WB	Left Turn							
	Through	6	29	6	100.0%	64.5	29.6	7.8
	Right Turn							
	Subtotal	6	29	6	100.0%	64.5	29.6	7.8
Total		13	236	11	84.6%	54.7	13.0	63.7

## Intersection 12      Overland Trail/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through	6	7	6	100.0%	6.6	3.2	0.2
	Right Turn							
	Subtotal	6	7	6	100.0%	6.6	3.2	0.2
WB	Left Turn							
	Through	6	16	6	100.0%	12.3	7.0	0.8
	Right Turn							
	Subtotal	6	16	6	100.0%	12.3	7.0	0.8
Total		12	23	12	100.0%	9.5	3.7	1.0



# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
Existing  
PM Peak Hour

Intersection 2		Shields St/W Laurel St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	858	838	97.7%	8.3	2.7	A	128
	Through	428	412	96.2%	11.6	2.4	B	87
	Right Turn							
	Subtotal	1,286	1,250	97.2%	9.4	2.4	A	215
SB	Left Turn	99	96	96.7%	52.3	9.1	D	92
	Through	971	920	94.7%	17.5	1.8	B	295
	Right Turn							
	Subtotal	1,070	1,016	94.9%	20.9	1.9	C	387
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	497	491	98.7%	71.2	15.4	E	640
	Through							
	Right Turn	154	149	96.8%	42.5	15.3	D	116
	Subtotal	651	640	98.2%	64.1	15.1	E	756
Total		3,007	2,905	96.6%	24.8	3.8	C	1358

Intersection 3		Shields St/W Plum St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	70	63	90.1%	98.7	82.1	F	114
	Through	1,205	1,175	97.5%	4.7	1.5	A	100
	Right Turn	56	51	91.8%	3.4	2.2	A	3
	Subtotal	1,331	1,290	96.9%	8.8	4.4	A	218
SB	Left Turn	18	19	104.4%	45.3	24.3	D	16
	Through	1,390	1,334	96.0%	8.1	1.9	A	199
	Right Turn	60	59	99.0%	6.9	1.0	A	8
	Subtotal	1,468	1,412	96.2%	8.6	2.0	A	222
EB	Left Turn	59	59	99.7%	77.7	34.3	E	84
	Through	23	25	109.1%	83.2	35.2	F	38
	Right Turn	61	57	93.0%	82.2	31.8	F	85
	Subtotal	143	141	98.3%	79.9	32.2	E	207
WB	Left Turn	56	51	90.4%	74.5	27.1	E	69
	Through	24	27	111.7%	58.2	15.6	E	29
	Right Turn	22	19	87.7%	25.5	9.3	C	9
	Subtotal	102	97	94.8%	60.1	18.1	E	107
Total		3,044	2,939	96.6%	13.6	2.7	B	754

Intersection 4		Shields St/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	273	250	91.6%	136.7	58.3	F	627
	Through	1,001	971	97.0%	52.4	36.5	D	932
	Right Turn	57	56	97.9%	40.2	36.2	D	41
	Subtotal	1,331	1,277	96.0%	66.8	40.2	E	1601
SB	Left Turn	10	10	95.0%	34.4	30.9	C	6
	Through	1,067	1,015	95.1%	25.1	7.0	C	468
	Right Turn	430	412	95.8%	16.2	4.6	B	122
	Subtotal	1,507	1,436	95.3%	22.7	6.1	C	596
EB	Left Turn	324	316	97.6%	57.3	10.2	E	332
	Through	48	49	101.9%	58.9	14.4	E	53
	Right Turn	379	366	96.5%	63.8	20.6	E	427
	Subtotal	751	731	97.3%	61.0	11.7	E	812
WB	Left Turn	61	61	99.3%	49.8	9.8	D	55
	Through	36	36	100.8%	46.0	7.3	D	31
	Right Turn	6	6	91.7%	9.3	11.1	A	1
	Subtotal	103	102	99.4%	46.8	7.0	D	87
Total		3,692	3,547	96.1%	46.4	15.0	D	3096

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
Existing  
PM Peak Hour

Intersection 5		Shields St/Lake St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn							
	Through	1,268	1,259	99.3%	2.9	0.8	A	68
	Right Turn	52	51	98.8%	3.1	1.3	A	3
	Subtotal	1,320	1,311	99.3%	2.9	0.8	A	71
SB	Left Turn	92	87	94.9%	37.1	9.4	D	59
	Through	1,360	1,291	94.9%	13.2	6.2	B	312
	Right Turn							
	Subtotal	1,452	1,379	94.9%	14.7	6.6	B	371
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	117	118	101.0%	55.5	9.3	E	120
	Through							
	Right Turn	157	154	98.1%	9.3	3.5	A	26
	Subtotal	274	272	99.3%	30.0	7.3	C	146
Total		3,046	2,961	97.2%	11.2	3.4	B	588

Intersection 6		Shields St/Prospect			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	160	155	96.8%	56.5	10.6	E	160
	Through	908	904	99.6%	35.7	3.8	D	591
	Right Turn	137	134	98.1%	23.9	6.2	C	59
	Subtotal	1,205	1,193	99.0%	37.3	4.8	D	810
SB	Left Turn	218	226	103.7%	54.6	7.5	D	226
	Through	1,080	1,013	93.8%	22.4	5.7	C	416
	Right Turn	179	165	92.2%	14.0	4.5	B	42
	Subtotal	1,477	1,404	95.1%	26.7	4.7	C	685
EB	Left Turn	158	160	101.3%	65.0	12.9	E	191
	Through	396	396	99.9%	40.2	2.6	D	292
	Right Turn	159	157	98.8%	20.8	5.4	C	60
	Subtotal	713	713	100.0%	41.5	4.8	D	543
WB	Left Turn	196	195	99.6%	89.8	15.6	F	321
	Through	637	625	98.1%	78.7	12.3	E	902
	Right Turn	254	243	95.6%	80.6	16.3	F	359
	Subtotal	1,087	1,063	97.8%	81.3	13.3	F	1582
Total		4,482	4,373	97.6%	46.1	3.9	D	3620

Intersection 8		City Park Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	155	152	97.8%	46.8	15.9	D	130
	Through	107	101	94.7%	27.4	8.8	C	51
	Right Turn	87	86	99.3%	23.2	9.8	C	37
	Subtotal	349	339	97.2%	35.0	12.2	D	218
SB	Left Turn	73	74	101.1%	20.9	5.5	C	28
	Through	101	99	98.0%	17.2	3.2	B	31
	Right Turn	51	57	112.4%	18.8	3.8	B	20
	Subtotal	225	230	102.3%	18.8	2.7	B	79
EB	Left Turn	61	61	99.3%	17.3	5.0	B	19
	Through	508	504	99.1%	9.0	1.0	A	83
	Right Turn	96	98	101.6%	9.9	2.0	A	18
	Subtotal	665	662	99.5%	9.9	1.1	A	120
WB	Left Turn	89	89	99.9%	28.7	8.5	C	47
	Through	491	463	94.2%	9.2	1.2	A	78
	Right Turn	77	69	89.2%	9.4	2.2	A	12
	Subtotal	657	620	94.4%	11.8	1.6	B	136
Total		1,896	1,851	97.6%	16.6	2.3	B	553

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
Existing  
PM Peak Hour

Intersection 9		Constitution Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	2	2	95.0%	3.1	6.8	A	0
	Through	26	23	89.2%	24.5	7.7	C	10
	Right Turn	35	34	98.3%	7.8	2.8	A	5
	Subtotal	63	60	94.4%	13.7	3.9	B	15
SB	Left Turn	36	36	100.0%	23.5	4.4	C	16
	Through	22	23	104.1%	22.9	10.3	C	10
	Right Turn	74	76	103.2%	14.5	5.7	B	20
	Subtotal	132	135	102.5%	18.6	3.4	B	45
EB	Left Turn	47	46	98.3%	20.3	13.5	C	17
	Through	531	527	99.2%	6.1	1.1	A	59
	Right Turn	6	6	105.0%	9.5	9.0	A	1
	Subtotal	584	579	99.2%	7.5	2.0	A	77
WB	Left Turn	39	41	105.4%	6.0	2.2	A	5
	Through	622	583	93.7%	7.3	4.8	A	78
	Right Turn	47	52	110.2%	11.9	9.2	B	11
	Subtotal	708	676	95.4%	7.5	4.7	A	94
Total		1,487	1,450	97.5%	9.0	3.1	A	232

Intersection 11		Taft Hill Rd/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	136	133	98.0%	33.9	2.9	C	83
	Through	577	572	99.2%	21.8	3.5	C	229
	Right Turn	129	125	97.2%	19.9	6.7	B	46
	Subtotal	842	831	98.7%	23.4	3.4	C	357
SB	Left Turn	106	107	101.1%	42.8	12.5	D	84
	Through	768	765	99.6%	30.7	5.7	C	431
	Right Turn	84	81	96.5%	29.8	5.3	C	44
	Subtotal	958	953	99.5%	32.1	5.9	C	559
EB	Left Turn	162	157	96.9%	77.3	39.3	E	222
	Through	305	305	99.9%	58.0	31.2	E	324
	Right Turn	121	120	99.2%	37.6	30.8	D	83
	Subtotal	588	582	98.9%	59.7	33.5	E	629
WB	Left Turn	178	164	92.2%	45.1	17.3	D	136
	Through	319	303	95.1%	39.0	10.7	D	217
	Right Turn	77	71	92.6%	8.9	2.7	A	12
	Subtotal	574	539	93.9%	36.7	6.6	D	364
Total		2,962	2,905	98.1%	35.5	7.3	D	1910

Intersection 12		Overland Trail/W Elizabeth St			Side-street Stop			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	2	2	90.0%	1.6	2.1	A	0
	Through	322	329	102.1%	0.5	0.1	A	3
	Right Turn	83	83	99.8%	1.0	0.2	A	1
	Subtotal	407	413	101.5%	0.6	0.1	A	5
SB	Left Turn	73	75	102.6%	4.5	1.3	A	6
	Through	537	540	100.5%	0.5	0.1	A	5
	Right Turn	7	6	84.3%	0.6	0.5	A	0
	Subtotal	617	621	100.6%	1.1	0.3	A	12
EB	Left Turn	2	2	120.0%	7.4	11.7	A	0
	Through	3	4	130.0%	2.6	2.7	A	0
	Right Turn	5	6	126.0%	7.1	10.1	A	1
	Subtotal	5	6	126.0%	7.1	10.1	A	1
WB	Left Turn	69	67	96.4%	29.6	7.2	D	36
	Through	5	6	122.0%	14.8	14.1	B	2
	Right Turn	67	64	96.1%	10.3	3.5	B	12
	Subtotal	141	137	97.2%	20.5	5.7	C	50
Total		1,170	1,177	100.6%	3.3	0.9	A	67

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle PM Peak

## Intersection 2 Shields St/W Laurel St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	3	3	100.0%	2.4	3.9	0.1
	Right Turn	5	5	98.0%	0.4	1.0	0.0
	Subtotal	8	8	98.8%	1.4	1.8	0.2
SB	Left Turn	1	0	0.0%	0.0	0.0	0.0
	Through	1	0	0.0%	0.0	0.0	0.0
	Right Turn						
	Subtotal	2	0	0.0%	0.0	0.0	0.0
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	6	5	90.0%	40.9	32.1	4.1
	Through						
	Right Turn	7	7	95.7%	25.5	29.9	3.0
	Subtotal	13	12	93.1%	33.8	17.3	7.1
Total		23	20	87.0%	19.0	12.6	7.2

## Intersection 3 Shields St/W Plum St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	2	200.0%	86.9	152.4	1.4
	Through	7	6	85.7%	1.7	3.6	0.2
	Right Turn	3	1	26.7%	0.0	0.0	0.0
	Subtotal	11	9	80.0%	50.9	66.1	1.6
SB	Left Turn						
	Through	5	3	62.0%	1.0	2.2	0.1
	Right Turn	2	2	120.0%	1.3	2.1	0.0
	Subtotal	7	6	78.6%	1.6	2.1	0.1
EB	Left Turn	1	1	110.0%	25.0	43.4	0.4
	Through	36	35	98.3%	36.3	12.1	21.8
	Right Turn						
	Subtotal	37	37	98.6%	37.7	11.6	22.2
WB	Left Turn	2	2	110.0%	36.7	50.6	1.2
	Through	119	116	97.7%	42.1	10.0	83.4
	Right Turn						
	Subtotal	121	119	97.9%	42.5	10.4	84.6
Total		176	169	96.2%	40.28	7.3	108.61

## Intersection 4 Shields St/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	2	1	65.0%	12.3	26.6	0
	Through	9	6	66.7%	6.4	11.7	1.0
	Right Turn	5	4	74.0%	0.4	0.9	0.0
	Subtotal	16	11	68.8%	8.5	12.2	1.4
SB	Left Turn	1	1	90.0%	5.9	18.7	0.1
	Through	3	2	56.7%	0.0	0.0	0.0
	Right Turn	3	3	86.7%	0.6	0.9	0.0
	Subtotal	7	5	74.3%	4.4	12.5	0.1
EB	Left Turn	1	1	80.0%	6.1	19.2	0.1
	Through	12	11	95.0%	51.5	25.1	10.3
	Right Turn	1	1	110.0%	16.5	36.8	0.3
	Subtotal	14	13	95.0%	51.9	26.7	10.7
WB	Left Turn	3	2	76.7%	11.6	25.7	0.6
	Through	102	102	99.7%	43.6	8.6	74.2
	Right Turn	1	1	110.0%	0.1	0.2	0.0
	Subtotal	106	105	99.2%	42.9	8.7	74.7
Total		143	135	94.1%	38.7	6.0	86.9

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle PM Peak

## Intersection 5 Shields St/Lake St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	9	6	66.7%	6.4	11.7	1.0
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	7	5	74.3%	9.2	10.8	1.1
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	8	7	91.3%	35.5	20.9	4.7
	Through						
	Right Turn						
	Subtotal						
Total		31	24	78.4%	19.2	7.5	7.8

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	27	22	83.0%	28.3	13.1	12.6
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	15	12	81.3%	18.0	12.1	4.5
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	11	9	79.1%	72.0	33.4	11.4
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		53	43	81.7%	32.7	10.7	28.6

## Intersection 8 City Park Ave/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	16	15	93.1%	16.6	9.8	3.3
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	14	13	92.1%	19.3	5.0	4.0
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	31	31	100.3%	16.0	3.1	7.7
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	113	112	99.3%	11.5	4.0	21.3
	Through						
	Right Turn						
	Subtotal						
Total		174	171	98.3%	13.7	2.8	36.4

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle PM Peak

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	2	2	95.0%	0.1	0.2	0.0
	Through	2	2	105.0%	0.8	1.7	0.0
	Right Turn	2	2	105.0%	0.8	1.7	0.0
	Subtotal	4	4	100.0%	0.7	1.4	0.0
SB	Left Turn	3	3	100.0%	27.6	20.2	1.4
	Through	12	13	105.0%	23.1	17.1	4.6
	Right Turn	11	12	104.5%	2.1	3.7	0.4
	Subtotal	26	27	104.2%	18.3	8.1	6.4
EB	Left Turn	1	1	70.0%	0.8	1.8	0.0
	Through	38	37	98.4%	9.8	5.5	6.2
	Right Turn	1	1	100.0%	0.8	1.8	0.0
	Subtotal	39	38	97.7%	9.8	5.5	6.3
WB	Left Turn	69	67	97.2%	6.4	3.0	7.4
	Through	4	3	80.0%	0.6	1.0	0.0
	Right Turn	4	3	80.0%	0.6	1.0	0.0
	Subtotal	73	70	96.3%	6.2	2.8	7.4
Total		142	140	98.2%	9.1	2.4	20.1

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	1	70.0%	0.0	0.0	0
	Through	2	1	55.0%	2.6	7.8	0.1
	Right Turn	2	1	65.0%	9.9	18.6	0.3
	Subtotal	5	3	62.0%	10.2	15.7	0.4
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	47	45	96.0%	30.8	10.1	24.1
	Through	47	45	96.0%	30.8	10.1	24.1
	Right Turn	47	45	96.0%	30.8	10.1	24.1
	Subtotal	47	45	96.0%	30.8	10.1	24.1
WB	Left Turn	47	47	100.0%	44.2	10.0	34.6
	Through	1	1	130.0%	3.3	7.0	0.1
	Right Turn	1	1	130.0%	3.3	7.0	0.1
	Subtotal	48	48	100.6%	43.6	10.2	34.7
Total		100	97	96.5%	37.2	6.9	59.2

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	44	44	100.5%	0.6	1.3	0.4
	Through	4	4	102.5%	0.0	0.0	0.0
	Right Turn	4	4	102.5%	0.0	0.0	0.0
	Subtotal	48	48	100.6%	0.6	1.3	0.4
SB	Left Turn	29	26	87.9%	0.2	0.5	0.1
	Through	29	26	87.9%	0.2	0.5	0.1
	Right Turn	29	26	87.9%	0.2	0.5	0.1
	Subtotal	29	26	87.9%	0.2	0.5	0.1
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	9	6	63.3%	4.9	5.0	0.7
	Through	3	3	103.3%	2.9	4.0	0.1
	Right Turn	3	3	103.3%	2.9	4.0	0.1
	Subtotal	12	9	73.3%	5.4	3.1	0.9
Total		89	83	92.8%	1.2	0.9	1.4

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk PM Peak

## Intersection 2

### Shields St/W Laurel St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through						
	Right Turn	11	10	90.9%	66.9	35.2	
	Subtotal	11	10	90.9%	66.9	35.2	
SB	Left Turn	1	1	140.0%	18.0	28.3	
	Through						
	Right Turn						
	Subtotal	1	1	140.0%	18.0	28.3	
EB	Left Turn	13	14	105.4%	54.0	21.9	
	Through						
	Right Turn						
	Subtotal	13	14	105.4%	54.0	21.9	
WB	Left Turn						
	Through						
	Right Turn	39	38	97.2%	57.1	12.3	
	Subtotal	39	38	97.2%	57.1	12.3	
Total		64	63	98.4%	58.5	7.7	61.4

## Intersection 3

### Shields St/W Plum St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	70.0%	6.4	17.1	
	East Side	14	15	107.9%	61.7	29.1	
	Subtotal	15	16	105.3%	62.8	26.7	
SB	East Side	1	1	100.0%	8.8	27.7	
	West Side	9	10	106.7%	65.5	30.2	
	Subtotal	10	11	106.0%	65.8	30.3	
EB	North Side	24	24	100.0%	57.7	17.1	
	South Side	15	15	102.0%	47.5	21.1	
	Subtotal	39	39	100.8%	54.3	12.8	
WB	South Side	31	31	100.6%	53.6	16.2	
	North Side	62	58	93.1%	57.6	12.7	
	Subtotal	93	89	95.6%	57.3	6.4	
Total		157	155	98.5%	58.6	6.6	151.1

## Intersection 4

### Shields St/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	5	5	106.0%	38.0	36.5	
	East Side	3	4	120.0%	35.6	39.8	
	Subtotal	8	9	111.3%	50.3	35.6	
SB	East Side	4	4	95.0%	25.2	42.3	
	West Side	4	4	105.0%	41.8	28.1	
	Subtotal	8	8	100.0%	56.7	31.4	
EB	North Side	20	21	104.0%	61.9	9.7	
	South Side	14	13	90.7%	68.3	21.4	
	Subtotal	34	34	98.5%	63.9	12.4	
WB	South Side	68	69	101.5%	54.5	6.6	
	North Side	44	43	97.0%	59.2	7.2	
	Subtotal	112	112	99.7%	56.1	5.6	
Total		162	162	100.1%	57.2	6.3	154.6

## Intersection 5

### Shields St/Lake St

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk PM Peak

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side						
	East Side	6	7	113.3%	26.4	35.5	
	Subtotal	6	7	113.3%	26.4	35.5	
SB	East Side	9	10	106.7%	60.2	21.1	
	West Side						
	Subtotal	9	10	106.7%	60.2	21.1	
EB	North Side	5	4	84.0%	30.2	40.7	
	South Side						
	Subtotal	5	4	84.0%	30.2	40.7	
WB	South Side						
	North Side	5	5	94.0%	42.6	27.2	
	Subtotal	5	5	94.0%	42.6	27.2	
Total		25	25	101.2%	43.7	13.8	18.4

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	8	8	101.3%	43.0	27.2	
	East Side	8	9	106.3%	108.5	158.8	
	Subtotal	16	17	103.8%	85.5	69.9	
SB	East Side	21	22	105.7%	50.3	13.6	
	West Side	10	11	110.0%	58.2	26.5	
	Subtotal	31	33	107.1%	56.9	13.0	
EB	North Side	3	3	103.3%	31.0	37.9	
	South Side	6	6	103.3%	40.5	37.3	
	Subtotal	9	9	103.3%	56.5	25.3	
WB	South Side	7	7	92.9%	138.6	245.0	
	North Side	8	9	106.3%	54.9	53.1	
	Subtotal	15	15	100.0%	79.8	38.3	
Total		71	74	104.4%	67.3	19.2	83.1

## Intersection 7 Ped Crossing/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	6	6	95.0%	0.0	0.0	
	East Side	2	2	95.0%	0.8	1.7	
	Subtotal	8	8	95.0%	0.2	0.4	
SB	East Side	1	2	160.0%	5.7	9.1	
	West Side	6	6	95.0%	0.0	0.0	
	Subtotal	7	7	104.3%	2.3	3.5	
EB	North Side						
	South Side						
	Subtotal						
WB	South Side						
	North Side						
	Subtotal						
Total		15	15	99.3%	1.3	1.9	0.3

## Intersection 8 City Park Ave/W Elizabeth St



# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk PM Peak

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	32	32	100.3%	45.8	24.0	
	East Side	19	20	106.8%	26.8	8.4	
	Subtotal	51	52	102.7%	37.9	13.7	
SB	East Side	42	42	101.0%	38.1	23.1	
	West Side	19	18	93.2%	26.6	7.2	
	Subtotal	61	60	98.5%	35.0	16.0	
EB	North Side	35	35	99.7%	30.1	5.8	
	South Side	37	38	103.5%	23.2	8.0	
	Subtotal	72	73	101.7%	26.9	5.6	
WB	South Side	32	35	108.1%	26.7	4.7	
	North Side	35	35	99.7%	30.1	5.8	
	Subtotal	55	59	107.1%	26.8	4.3	
Total		239	245	102.3%	31.2	3.5	127.2

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	90.0%	5.8	17.5	
	East Side	2	2	120.0%	8.3	13.7	
	Subtotal	3	3	110.0%	9.0	16.6	
SB	East Side	7	7	98.6%	28.1	19.4	
	West Side	1	1	50.0%	6.6	15.8	
	Subtotal	8	7	92.5%	28.2	19.5	
EB	North Side	6	6	103.3%	15.3	15.5	
	South Side	8	8	102.5%	16.3	14.4	
	Subtotal	14	14	102.9%	19.2	10.6	
WB	South Side	6	5	90.0%	13.9	9.5	
	North Side	9	10	110.0%	17.3	13.7	
	Subtotal	15	15	102.0%	17.3	6.5	
Total		40	40	101.0%	20.8	6.1	14.0

## Intersection 10 Ped Signal/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	60.0%	5.2	11.1	
	East Side						
	Subtotal	1	1	60.0%	5.2	11.1	
SB	East Side	3	3	100.0%	24.3	21.1	
	West Side						
	Subtotal	3	3	100.0%	24.3	21.1	
EB	North Side						
	South Side						
	Subtotal						
WB	South Side						
	North Side						
	Subtotal						
Total		4	4	90.0%	24.0	15.3	1.4

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)	Percent	Total Delay (sec/person)	Total Person Delay (min)
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# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk PM Peak

Direction	Movement	Volume (pph)	Average	Percent	Average	Std. Dev.	Delay (min)
NB	West Side	7	7	98.6%	24.5	27.3	
	East Side	4	5	117.5%	40.2	82.5	
	Subtotal	11	12	105.5%	37.1	58.1	
SB	East Side	3	3	83.3%	20.5	33.5	
	West Side	9	9	104.4%	53.2	46.8	
	Subtotal	12	12	99.2%	63.5	39.5	
EB	North Side	5	4	80.0%	29.3	31.9	
	South Side	8	10	123.8%	37.6	18.5	
	Subtotal	13	14	106.9%	39.9	16.6	
WB	South Side	7	7	97.1%	48.2	20.4	
	North Side	7	7	105.7%	32.8	26.7	
	Subtotal	14	14	101.4%	44.7	13.0	
Total		50	52	103.2%	49.4	22.1	42.5

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	3	2	66.7%	0.0	0.0	
	East Side	2	2	85.0%	0.0	0.0	
	Subtotal	5	4	74.0%	0.0	0.0	
SB	East Side	2	2	110.0%	0.0	0.0	
	West Side	1	1	100.0%	0.0	0.0	
	Subtotal	3	3	106.7%	0.0	0.0	
EB	North Side	2	2	95.0%	2.3	5.2	
	South Side	1	1	120.0%	0.5	1.7	
	Subtotal	3	3	103.3%	2.9	5.2	
WB	South Side						
	North Side	1	1	100.0%	1.6	4.9	
	Subtotal	1	1	100.0%	1.6	4.9	
Total		12	11	91.7%	1.2	2.1	0.2

Vissim Post-Processor  
 Average Results from 10 Runs  
 Volume and Delay by Movement

Transit PM Peak

**Intersection 2 Shields St/W Laurel St**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn	2	19	2	100.0%	0.0	0.0	0.0
	Subtotal	2	19	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	2	73	2	100.0%	98.3	43.0	29.9
	Through							
	Right Turn							
	Subtotal	2	73	2	100.0%	98.3	43.0	29.9
Total		4	92	4	100.0%	65.5	28.7	29.9

**Intersection 3 Shields St/W Plum St**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn	2	18	2	100.0%	0.0	0.0	0.0
	Through							
	Right Turn	3	62	3	100.0%	3.5	5.3	0.9
	Subtotal	5	80	5	100.0%	3.5	5.3	0.9
SB	Left Turn	2	73	2	100.0%	11.6	7.7	3.5
	Through							
	Right Turn							
	Subtotal	2	73	2	100.0%	11.6	7.7	3.5
EB	Left Turn	6	211	6	100.0%	106.7	39.5	93.8
	Through							
	Right Turn							
	Subtotal	6	211	6	100.0%	106.7	39.5	93.8
WB	Left Turn	2	90	2	100.0%	126.6	48.8	47.5
	Through	8	795	8	100.0%	58.1	24.8	192.5
	Right Turn							
	Subtotal	10	885	10	100.0%	80.9	28.1	240.0
Total		23	1,249	23	100.0%	60.8	15.2	338.2

**Intersection 4 Shields St/W Elizabeth St**

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	18	2	100.0%	64.4	15.0	4.8
	Right Turn							
	Subtotal	2	18	2	100.0%	64.4	15.0	4.8
SB	Left Turn							
	Through	2	73	2	100.0%	0.0	0.0	0.0
	Right Turn	2	90	2	100.0%	0.0	0.0	0.0
	Subtotal	4	163	4	100.0%	0.0	0.0	0.0
EB	Left Turn	3	62	3	100.0%	58.6	17.5	15.1
	Through							
	Right Turn							
	Subtotal	3	62	3	100.0%	58.6	17.5	15.1
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		9	243	9	100.0%	41.0	9.9	20.0

# Transit

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Transit PM Peak

## Intersection 5 Shields St/Lake St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	124	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	124	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through	2	75	2	100.0%	15.7	14.9	4.9
	Right Turn							
	Subtotal	2	75	2	100.0%	15.7	14.9	4.9
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		4	199	4	100.0%	10.5	9.9	4.9

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	26	2	100.0%	19.6	8.3	2.1
	Right Turn							
	Subtotal	2	26	2	100.0%	19.6	8.3	2.1
SB	Left Turn							
	Through	2	75	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	75	2	100.0%	0.0	0.0	0.0
EB	Left Turn	2	99	2	100.0%	57.5	6.2	23.7
	Through							
	Right Turn							
	Subtotal		99					23.7
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		4	200	4	100.0%	13.1	5.6	25.8

## Intersection 8 City Park Ave/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn	6	365	6	100.0%	77.2	16.7	117.4
	Subtotal	6	365	6	100.0%	77.2	16.7	117.4
EB	Left Turn							
	Through	3	71	3	100.0%	30.1	14.3	8.9
	Right Turn							
	Subtotal	3	71	3	100.0%	30.1	14.3	8.9
WB	Left Turn							
	Through	2	90	2	100.0%	14.9	6.3	5.6
	Right Turn							
	Subtotal	2	90	2	100.0%	14.9	6.3	5.6
Total		11	526	11	100.0%	50.1	7.5	131.9

# Transit

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Transit PM Peak

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn	2	199	2	100.0%	45.7	13.1	37.9
	Subtotal	2	199	2	100.0%	45.7	13.1	37.9
EB	Left Turn							
	Through	3	74	3	100.0%	18.0	20.1	5.6
	Right Turn							
	Subtotal	3	74	3	100.0%	18.0	20.1	5.6
WB	Left Turn							
	Through	2	88	2	90.0%	18.4	14.9	6.7
	Right Turn	6	316	6	98.3%	15.0	4.6	19.8
	Subtotal	8	404	8	96.3%	16.9	6.8	26.5
Total		13	677	13	97.7%	24.1	4.7	69.9

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through		14	1	100.0%	21.8	3.5	1.3
	Right Turn							
	Subtotal		14					1.3
SB	Left Turn							
	Through		13	1	100.0%	30.7	5.7	1.7
	Right Turn							
	Subtotal		13					1.7
EB	Left Turn							
	Through	4	71	4	87.5%	83.4	30.8	24.7
	Right Turn							
	Subtotal	4	71	4	87.5%	83.4	30.8	24.7
WB	Left Turn							
	Through	4	261	4	100.0%	70.4	43.3	76.6
	Right Turn							
	Subtotal	4	261	4	100.0%	70.4	43.3	76.6
Total		8	359	8	93.8%	79.7	29.0	104.2

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn	2	59	2	100.0%	2.5	0.8	0.6
	Subtotal	2	59	2	100.0%	2.5	0.8	0.6
SB	Left Turn	2	6	2	100.0%	0.0	0.0	0.0
	Through							
	Right Turn							
	Subtotal	2	6	2	100.0%	0.0	0.0	0.0
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	2	55	2	95.0%	63.2	8.5	14.5
	Through							
	Right Turn	2	7	2	100.0%	0.0	0.0	0.0
	Subtotal	4	62	4	97.5%	63.2	8.5	14.5
Total		8	127	8	98.8%	26.3	3.5	15.1

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
TSM Alt  
PM Peak Hour

Intersection 2		Shields St/W Laurel St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	858	834	97.2%	8.0	2.2	A	123
	Through	428	418	97.7%	10.2	2.1	B	78
	Right Turn							
	Subtotal	1,286	1,253	97.4%	8.8	2.0	A	201
SB	Left Turn	99	93	94.0%	49.6	7.3	D	85
	Through	971	921	94.8%	18.2	2.4	B	307
	Right Turn							
	Subtotal	1,070	1,014	94.7%	21.0	2.5	C	392
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	497	489	98.4%	76.5	19.8	E	686
	Through							
	Right Turn	154	150	97.5%	48.7	27.0	D	134
	Subtotal	651	639	98.2%	69.5	21.3	E	820
Total		3,007	2,905	96.6%	26.2	5.8	C	1413

Intersection 3		Shields St/W Plum St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	70	64	91.9%	104.8	78.1	F	124
	Through	1,205	1,172	97.3%	4.6	1.1	A	98
	Right Turn	56	50	89.8%	3.6	1.9	A	3
	Subtotal	1,331	1,287	96.7%	9.3	4.3	A	225
SB	Left Turn	18	19	107.8%	50.5	24.5	D	18
	Through	1,390	1,333	95.9%	9.6	3.2	A	235
	Right Turn	60	59	98.8%	8.4	2.2	A	9
	Subtotal	1,468	1,411	96.1%	10.2	3.1	B	262
EB	Left Turn	59	58	98.5%	75.4	16.5	E	80
	Through	23	32	139.1%	82.3	15.1	F	48
	Right Turn	61	56	91.3%	73.0	8.9	E	75
	Subtotal	143	146	102.0%	75.1	10.2	E	203
WB	Left Turn	56	49	87.3%	67.4	23.7	E	60
	Through	24	31	127.5%	67.2	24.0	E	38
	Right Turn	22	20	91.4%	24.4	16.1	C	9
	Subtotal	102	100	97.6%	57.5	19.4	E	107
Total		3,044	2,944	96.7%	14.4	2.9	B	798

Intersection 4		Shields St/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	273	249	91.1%	117.4	38.9	F	535
	Through	1,001	974	97.3%	45.8	24.8	D	818
	Right Turn	57	55	96.3%	39.1	21.1	D	39
	Subtotal	1,331	1,278	96.0%	60.3	27.5	E	1393
SB	Left Turn	10	10	97.0%	46.5	18.8	D	8
	Through	1,067	1,008	94.4%	22.0	4.6	C	407
	Right Turn	430	411	95.5%	13.5	3.1	B	102
	Subtotal	1,507	1,428	94.8%	19.8	4.0	B	517
EB	Left Turn	324	310	95.7%	67.0	16.8	E	381
	Through	48	49	102.9%	67.3	15.4	E	61
	Right Turn	379	363	95.8%	64.3	17.5	E	428
	Subtotal	751	723	96.2%	66.0	12.2	E	869
WB	Left Turn	61	61	99.8%	49.7	5.6	D	56
	Through	36	36	100.0%	54.7	7.4	D	36
	Right Turn	6	6	98.3%	19.4	14.6	B	2
	Subtotal	103	103	99.8%	49.4	5.2	D	94
Total		3,692	3,531	95.7%	45.6	12.6	D	2874

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
TSM Alt  
PM Peak Hour

Intersection 5		Shields St/Lake St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn							
	Through	1,268	1,255	99.0%	2.8	0.5	A	63
	Right Turn	52	57	109.0%	2.5	1.3	A	3
	Subtotal	1,320	1,312	99.4%	2.8	0.5	A	66
SB	Left Turn	92	85	92.1%	36.2	7.9	D	56
	Through	1,360	1,286	94.6%	11.1	2.8	B	261
	Right Turn							
	Subtotal	1,452	1,371	94.4%	12.7	2.9	B	317
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	117	120	102.6%	52.5	8.9	D	116
	Through							
	Right Turn	157	154	98.2%	9.7	3.1	A	27
	Subtotal	274	274	100.0%	29.5	6.1	C	143
Total		3,046	2,957	97.1%	10.1	1.6	B	526

Intersection 6		Shields St/Prospect			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	160	154	95.9%	55.1	9.5	E	155
	Through	908	910	100.2%	34.1	2.9	C	569
	Right Turn	137	131	95.5%	24.1	4.2	C	58
	Subtotal	1,205	1,194	99.1%	35.7	3.7	D	782
SB	Left Turn	218	225	103.2%	58.5	12.7	E	241
	Through	1,080	1,006	93.1%	19.1	4.0	B	352
	Right Turn	179	169	94.4%	11.0	2.1	B	34
	Subtotal	1,477	1,399	94.7%	24.5	4.9	C	628
EB	Left Turn	158	155	97.9%	70.0	18.0	E	199
	Through	396	395	99.7%	39.3	4.8	D	285
	Right Turn	159	162	101.8%	20.5	5.0	C	61
	Subtotal	713	712	99.8%	42.5	6.8	D	544
WB	Left Turn	196	192	97.8%	94.1	13.9	F	331
	Through	637	624	98.0%	84.7	20.6	F	970
	Right Turn	254	245	96.3%	89.7	21.8	F	402
	Subtotal	1,087	1,061	97.6%	87.6	19.3	F	1702
Total		4,482	4,366	97.4%	46.7	6.9	D	3656

Intersection 8		City Park Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	155	153	98.7%	48.6	17.9	D	136
	Through	107	102	95.7%	31.4	8.8	C	59
	Right Turn	87	88	100.6%	23.6	10.4	C	38
	Subtotal	349	343	98.3%	37.3	13.6	D	233
SB	Left Turn	73	70	95.9%	22.1	5.6	C	28
	Through	101	96	94.8%	17.6	3.0	B	31
	Right Turn	51	53	103.9%	19.5	3.8	B	19
	Subtotal	225	219	97.2%	19.4	2.5	B	78
EB	Left Turn	61	60	98.7%	18.1	4.7	B	20
	Through	508	500	98.3%	8.4	1.2	A	77
	Right Turn	96	95	99.1%	9.5	1.9	A	17
	Subtotal	665	655	98.5%	9.5	1.5	A	113
WB	Left Turn	89	84	94.3%	24.7	6.7	C	38
	Through	491	458	93.4%	8.8	0.9	A	74
	Right Turn	77	71	91.7%	10.0	1.8	A	13
	Subtotal	657	613	93.3%	10.9	1.4	B	125
Total		1,896	1,829	96.5%	16.9	2.4	B	549

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
TSM Alt  
PM Peak Hour

Intersection 9		Constitution Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	2	2	115.0%	17.2	17.7	B	1
	Through	26	24	92.3%	24.4	5.6	C	11
	Right Turn	35	34	97.1%	7.0	3.4	A	4
	Subtotal	63	60	95.7%	14.9	4.5	B	16
SB	Left Turn	36	36	98.9%	29.4	6.5	C	19
	Through	22	24	106.8%	27.9	7.7	C	12
	Right Turn	74	78	105.5%	18.2	8.9	B	26
	Subtotal	132	137	103.9%	22.6	4.9	C	57
EB	Left Turn	47	53	112.3%	19.6	5.8	B	19
	Through	531	518	97.6%	5.2	1.5	A	50
	Right Turn	6	6	93.3%	3.0	3.5	A	0
	Subtotal	584	577	98.7%	6.6	1.6	A	69
WB	Left Turn	39	40	101.8%	12.3	4.1	B	9
	Through	622	584	93.8%	9.8	4.2	A	105
	Right Turn	47	49	104.0%	10.8	5.5	B	10
	Subtotal	708	672	94.9%	10.1	4.0	B	123
Total		1,487	1,446	97.3%	9.9	2.9	A	265

Intersection 11		Taft Hill Rd/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	136	131	96.6%	32.9	5.8	C	79
	Through	577	576	99.9%	23.1	2.7	C	244
	Right Turn	129	128	99.1%	20.5	6.2	C	48
	Subtotal	842	835	99.2%	24.1	2.7	C	371
SB	Left Turn	106	106	99.8%	43.5	11.7	D	84
	Through	768	756	98.4%	30.9	5.3	C	428
	Right Turn	84	84	99.5%	28.5	6.9	C	44
	Subtotal	958	945	98.6%	32.2	5.4	C	556
EB	Left Turn	162	159	98.3%	82.4	62.6	F	241
	Through	305	305	99.8%	60.5	47.5	E	338
	Right Turn	121	120	98.8%	40.8	46.3	D	89
	Subtotal	588	583	99.2%	63.1	53.4	E	668
WB	Left Turn	178	165	92.7%	49.3	20.3	D	149
	Through	319	308	96.4%	45.0	9.7	D	254
	Right Turn	77	71	91.6%	12.3	5.5	B	16
	Subtotal	574	543	94.6%	42.0	11.9	D	419
Total		2,962	2,907	98.1%	37.1	9.5	D	2014

Intersection 12		Overland Trail/W Elizabeth St			Side-street Stop			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	2	2	80.0%	1.9	3.1	A	0
	Through	322	329	102.1%	0.5	0.1	A	3
	Right Turn	83	84	101.2%	1.0	0.2	A	1
	Subtotal	407	415	101.8%	0.6	0.1	A	5
SB	Left Turn	73	72	97.9%	4.6	0.9	A	6
	Through	537	531	99.0%	0.5	0.1	A	5
	Right Turn	7	5	64.3%	0.6	0.4	A	0
	Subtotal	617	607	98.4%	1.0	0.3	A	11
EB	Left Turn	2	2	115.0%	5.3	9.9	A	0
	Through							
	Right Turn	3	4	133.3%	6.9	8.6	A	1
	Subtotal	5	6	126.0%	7.9	9.1	A	1
WB	Left Turn	69	63	91.0%	28.6	10.5	D	33
	Through	5	5	96.0%	10.9	15.8	B	1
	Right Turn	67	67	100.1%	17.7	2.8	C	22
	Subtotal	141	135	95.5%	23.1	6.0	C	56
Total		1,170	1,163	99.4%	3.6	1.0	A	72



# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle PM Peak  
TSM Alt

## Intersection 2 Shields St/W Laurel St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	3	3	83.3%	13.3	15.1	0.7
	Right Turn	5	5	98.0%	1.3	2.2	0.1
	Subtotal	8	7	92.5%	6.4	6.7	0.8
SB	Left Turn	1	0	0.0%	0.0	0.0	0.0
	Through	1	0	0.0%	0.0	0.0	0.0
	Right Turn						
	Subtotal	2	0	0.0%	0.0	0.0	0.0
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	6	6	91.7%	43.7	29.6	4.4
	Through						
	Right Turn	7	6	90.0%	23.8	21.2	2.8
	Subtotal	13	12	90.8%	41.6	24.2	7.1
Total		23	19	83.5%	24.4	14.5	7.9

## Intersection 3 Shields St/W Plum St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	2	230.0%	45.7	86.5	0.8
	Through	7	6	81.4%	4.2	7.5	0.5
	Right Turn	3	1	20.0%	3.0	9.4	0.1
	Subtotal	11	9	78.2%	41.5	59.7	1.4
SB	Left Turn						
	Through	5	3	64.0%	1.9	2.9	0.2
	Right Turn	2	2	115.0%	3.9	5.3	0.1
	Subtotal	7	6	78.6%	4.4	3.9	0.3
EB	Left Turn	1	1	120.0%	42.2	50.9	0.7
	Through	36	35	95.8%	38.0	11.9	22.8
	Right Turn						
	Subtotal	37	36	96.5%	40.2	13.1	23.5
WB	Left Turn	2	2	90.0%	47.6	48.3	1.6
	Through	119	116	97.7%	41.9	11.2	83.2
	Right Turn						
	Subtotal	121	118	97.6%	42.6	11.6	84.8
Total		176	168	95.4%	40.71	8.4	109.98

## Intersection 4 Shields St/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	2	1	50.0%	8.9	12.2	0
	Through	9	6	63.3%	6.3	10.3	0.9
	Right Turn	5	4	86.0%	0.0	0.0	0.0
	Subtotal	16	11	68.8%	8.6	10.8	1.2
SB	Left Turn	1	1	70.0%	13.5	39.1	0.2
	Through	3	2	53.3%	0.5	1.0	0.0
	Right Turn	3	3	86.7%	1.1	3.5	0.1
	Subtotal	7	5	70.0%	14.3	38.9	0.3
EB	Left Turn	1	1	50.0%	9.4	29.8	0.2
	Through	12	12	101.7%	56.0	26.8	11.2
	Right Turn	1	1	80.0%	7.8	21.5	0.1
	Subtotal	14	14	96.4%	50.4	22.1	11.5
WB	Left Turn	3	2	60.0%	17.7	23.8	0.9
	Through	102	104	101.8%	48.7	5.6	82.9
	Right Turn	1	1	80.0%	0.1	0.4	0.0
	Subtotal	106	106	100.4%	48.3	5.4	83.8
Total		143	136	95.0%	43.5	4.1	96.8

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle PM Peak  
TSM Alt

## Intersection 5 Shields St/Lake St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)			
			Average	Percent	Average	Std. Dev.				
NB	Left Turn	9	6	63.3%	7.2	12.8	1.1			
	Through									
	Right Turn									
	Subtotal		6	63.3%				7.2	12.8	1.1
SB	Left Turn	7	5	65.7%	3.5	6.9	0.4			
	Through									
	Right Turn									
	Subtotal		5	65.7%				3.5	6.9	0.4
EB	Left Turn									
	Through									
	Right Turn									
	Subtotal									
WB	Left Turn	8	7	86.3%	40.7	30.8	5.4			
	Through									
	Right Turn		6	88.6%				11.6	11.8	1.3
	Subtotal		13	87.3%				32.7	14.8	6.8
Total		31	23	75.5%	20.4	8.0	8.3			

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)			
			Average	Percent	Average	Std. Dev.				
NB	Left Turn	1	2	150.0%	20.3	25.4	0.3			
	Through		21	84.0%				24.7	12.1	10.3
	Right Turn		1	100.0%				1.1	1.8	0.0
	Subtotal		24	87.0%				25.3	13.5	10.6
SB	Left Turn	15	11	74.7%	12.8	11.3	3.2			
	Through									
	Right Turn									
	Subtotal		11	74.7%				12.8	11.3	3.2
EB	Left Turn	9	8	84.4%	89.7	33.9	13.5			
	Through		2	80.0%				6.0	18.8	0.2
	Right Turn									
	Subtotal		9	83.6%				87.2	36.5	13.7
WB	Left Turn									
	Through									
	Right Turn									
	Subtotal									
Total		53	44	82.8%	32.4	11.0	27.5			

## Intersection 8 City Park Ave/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)			
			Average	Percent	Average	Std. Dev.				
NB	Left Turn	3	3	103.3%	22.5	20.6	1			
	Through		9	102.2%				14.9	12.5	2.2
	Right Turn		4	97.5%				2.5	3.8	0.2
	Subtotal		16	101.3%				15.6	11.9	3.5
SB	Left Turn	5	6	116.0%	13.2	10.2	1.1			
	Through		7	87.5%				15.2	10.5	2.0
	Right Turn		1	60.0%				2.5	5.4	0.0
	Subtotal		13	95.7%				16.8	3.8	3.2
EB	Left Turn	1	1	140.0%	8.8	15.3	0.1			
	Through		28	97.6%				13.4	4.5	6.5
	Right Turn		1	100.0%				0.1	0.4	0.0
	Subtotal		31	99.0%				13.3	4.9	6.6
WB	Left Turn	10	12	115.0%	37.8	9.1	6.3			
	Through		88	100.5%				9.8	3.9	14.4
	Right Turn		15	96.7%				6.0	6.6	1.5
	Subtotal		114	101.2%				12.0	3.8	22.2
Total		174	175	100.4%	13.5	2.8	35.5			

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle PM Peak  
TSM Alt

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	2	2	85.0%	0.0	0.1	0.0
	Through	2	2	120.0%	1.5	1.9	0.0
	Right Turn	2	2	120.0%	1.5	1.9	0.0
	Subtotal	4	4	102.5%	1.5	1.9	0.0
SB	Left Turn	3	3	83.3%	20.3	19.0	1.0
	Through	12	12	101.7%	17.8	11.0	3.6
	Right Turn	11	12	106.4%	1.5	3.1	0.3
	Subtotal	26	26	101.5%	12.3	7.2	4.8
EB	Left Turn	1	1	70.0%	0.0	0.0	0.0
	Through	38	38	101.1%	12.3	5.2	7.8
	Right Turn	1	1	100.0%	0.0	0.0	0.0
	Subtotal	39	39	100.3%	12.3	5.2	7.8
WB	Left Turn	69	69	100.6%	10.4	4.9	11.9
	Through	4	3	77.5%	9.2	17.7	0.6
	Right Turn	4	3	77.5%	9.2	17.7	0.6
	Subtotal	73	73	99.3%	10.5	4.7	12.5
Total		142	142	100.1%	11.4	3.6	25.2

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	1	70.0%	0.0	0.0	0
	Through	2	1	55.0%	1.9	6.1	0.1
	Right Turn	2	2	80.0%	6.1	12.5	0.2
	Subtotal	5	3	68.0%	4.2	8.1	0.3
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	47	48	101.7%	28.8	6.2	22.6
	Through	47	48	101.7%	28.8	6.2	22.6
	Right Turn	47	48	101.7%	28.8	6.2	22.6
	Subtotal	47	48	101.7%	28.8	6.2	22.6
WB	Left Turn	47	49	103.4%	39.9	7.4	31.2
	Through	1	1	110.0%	8.3	15.8	0.1
	Right Turn	1	1	110.0%	8.3	15.8	0.1
	Subtotal	48	50	103.5%	39.4	7.6	31.4
Total		100	101	100.9%	32.3	5.7	54.2

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	44	44	99.1%	0.1	0.2	0.1
	Through	4	4	105.0%	0.0	0.0	0.0
	Right Turn	4	4	105.0%	0.0	0.0	0.0
	Subtotal	48	48	99.6%	0.1	0.2	0.1
SB	Left Turn	29	26	88.6%	0.0	0.0	0.0
	Through	29	26	88.6%	0.0	0.0	0.0
	Right Turn	29	26	88.6%	0.0	0.0	0.0
	Subtotal	29	26	88.6%	0.0	0.0	0.0
EB	Left Turn	9	6	61.1%	6.3	7.5	0.9
	Through	3	3	106.7%	6.4	4.7	0.3
	Right Turn	3	3	106.7%	6.4	4.7	0.3
	Subtotal	12	9	72.5%	7.9	5.4	1.3
Total		89	82	92.4%	1.3	1.7	1.4

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk PM Peak  
TSM Alt

## Intersection 2

### Shields St/W Laurel St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through						
	Right Turn	11	10	90.0%	49.7	35.7	
	Subtotal	11	10	90.0%	49.7	35.7	
SB	Left Turn	1	2	180.0%	16.8	30.9	
	Through						
	Right Turn						
	Subtotal	1	2	180.0%	16.8	30.9	
EB	Left Turn	13	12	90.8%	54.2	22.6	
	Through						
	Right Turn						
	Subtotal	13	12	90.8%	54.2	22.6	
WB	Left Turn						
	Through						
	Right Turn	39	39	100.3%	60.5	10.0	
	Subtotal	39	39	100.3%	60.5	10.0	
Total		64	63	97.8%	58.6	8.0	61.1

## Intersection 3

### Shields St/W Plum St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	120.0%	3.0	6.4	
	East Side	14	16	110.7%	54.1	27.0	
	Subtotal	15	17	111.3%	54.2	23.2	
SB	East Side	1	1	70.0%	0.0	0.0	
	West Side	9	9	101.1%	63.1	31.3	
	Subtotal	10	10	98.0%	63.1	31.3	
EB	North Side	24	24	100.8%	59.0	17.0	
	South Side	15	15	102.7%	46.8	20.0	
	Subtotal	39	40	101.5%	54.7	12.2	
WB	South Side	31	33	107.7%	53.0	15.8	
	North Side	62	59	95.0%	58.3	12.5	
	Subtotal	93	92	99.2%	56.5	8.0	
Total		157	158	100.9%	56.9	6.9	150.1

## Intersection 4

### Shields St/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	5	4	80.0%	48.4	37.8	
	East Side	3	3	96.7%	31.6	42.3	
	Subtotal	8	7	86.3%	59.6	33.2	
SB	East Side	4	4	105.0%	56.7	49.1	
	West Side	4	4	105.0%	34.2	37.6	
	Subtotal	8	8	105.0%	68.0	38.6	
EB	North Side	20	21	104.0%	63.3	11.3	
	South Side	14	13	91.4%	64.6	20.0	
	Subtotal	34	34	98.8%	62.8	10.8	
WB	South Side	68	72	106.0%	56.5	6.4	
	North Side	44	45	101.4%	53.8	11.0	
	Subtotal	112	117	104.2%	55.3	6.7	
Total		162	166	102.2%	57.3	6.4	158.1

## Intersection 5

### Shields St/Lake St

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk PM Peak  
TSM Alt

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side						
	East Side	6	7	120.0%	32.2	30.4	
	Subtotal	6	7	120.0%	32.2	30.4	
SB	East Side	9	8	91.1%	41.4	36.2	
	West Side						
	Subtotal	9	8	91.1%	41.4	36.2	
EB	North Side	5	5	92.0%	59.5	42.6	
	South Side						
	Subtotal	5	5	92.0%	59.5	42.6	
WB	South Side						
	North Side	5	5	90.0%	41.4	28.6	
	Subtotal	5	5	90.0%	41.4	28.6	
Total		25	25	98.0%	46.0	14.0	18.8

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	8	8	97.5%	41.0	25.3	
	East Side	8	9	106.3%	86.9	37.3	
	Subtotal	16	16	101.9%	71.4	23.0	
SB	East Side	21	22	104.3%	56.6	16.8	
	West Side	10	12	115.0%	58.0	14.8	
	Subtotal	31	33	107.7%	58.6	10.7	
EB	North Side	3	3	86.7%	37.1	42.5	
	South Side	6	6	98.3%	29.3	29.0	
	Subtotal	9	9	94.4%	44.9	27.2	
WB	South Side	7	7	102.9%	85.8	66.2	
	North Side	8	7	90.0%	50.7	43.3	
	Subtotal	15	14	96.0%	95.9	53.5	
Total		71	73	102.3%	67.5	11.7	81.6

## Intersection 7 Ped Crossing/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	6	5	90.0%	0.0	0.0	
	East Side	2	1	60.0%	0.0	0.0	
	Subtotal	8	7	82.5%	0.0	0.0	
SB	East Side	1	2	190.0%	5.5	11.7	
	West Side	6	6	103.3%	0.0	0.0	
	Subtotal	7	8	115.7%	4.1	8.9	
EB	North Side						
	South Side						
	Subtotal						
WB	South Side						
	North Side						
	Subtotal						
Total		15	15	98.0%	1.8	3.9	0.5

## Intersection 8 City Park Ave/W Elizabeth St

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk PM Peak  
TSM Alt

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	32	31	95.3%	46.0	23.9	
	East Side	19	19	97.4%	20.1	12.8	
	Subtotal	51	49	96.1%	36.7	14.8	
SB	East Side	42	42	100.5%	34.3	23.5	
	West Side	19	19	100.0%	25.4	10.9	
	Subtotal	61	61	100.3%	32.8	16.0	
EB	North Side	35	36	103.4%	29.9	6.3	
	South Side	37	39	105.4%	24.7	4.9	
	Subtotal	72	75	104.4%	27.3	3.7	
WB	South Side	32	33	102.8%	30.3	7.0	
	North Side	35	36	103.4%	29.9	6.3	
	Subtotal	55	58	106.2%	26.5	5.0	
Total		239	244	102.0%	30.1	4.4	122.4

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	80.0%	1.2	3.0	
	East Side	2	2	95.0%	5.6	14.1	
	Subtotal	3	3	90.0%	4.2	10.4	
SB	East Side	7	8	107.1%	25.4	14.3	
	West Side	1	1	50.0%	11.7	21.2	
	Subtotal	8	8	100.0%	26.5	14.9	
EB	North Side	6	7	115.0%	16.5	14.0	
	South Side	8	8	98.8%	19.2	16.4	
	Subtotal	14	15	105.7%	19.1	11.2	
WB	South Side	6	6	93.3%	12.9	12.3	
	North Side	9	9	102.2%	23.4	17.2	
	Subtotal	15	15	98.7%	25.6	12.9	
Total		40	40	100.8%	23.9	3.5	16.1

## Intersection 10 Ped Signal/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	0	40.0%	0.0	0.0	
	East Side						
	Subtotal	1	0	40.0%	0.0	0.0	
SB	East Side	3	4	126.7%	24.2	18.4	
	West Side						
	Subtotal	3	4	126.7%	24.2	18.4	
EB	North Side						
	South Side						
	Subtotal						
WB	South Side						
	North Side						
	Subtotal						
Total		4	4	105.0%	20.7	15.6	1.5

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand	Served Volume (pph)	Total Delay (sec/person)	Total Person
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# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk PM Peak  
TSM Alt

Direction	Movement	Volume (pph)	Average	Percent	Average	Std. Dev.	Delay (min)
NB	West Side	7	8	111.4%	29.4	19.2	
	East Side	4	5	115.0%	44.3	84.0	
	Subtotal	11	12	112.7%	42.0	51.5	
SB	East Side	3	2	56.7%	18.5	31.0	
	West Side	9	9	104.4%	50.4	47.7	
	Subtotal	12	11	92.5%	61.9	40.3	
EB	North Side	5	4	70.0%	41.5	35.4	
	South Side	8	11	135.0%	47.9	20.2	
	Subtotal	13	14	110.0%	49.7	20.4	
WB	South Side	7	7	102.9%	44.5	22.3	
	North Side	7	6	91.4%	38.4	30.5	
	Subtotal	14	14	97.1%	43.0	10.4	
Total		50	51	102.8%	51.1	20.3	43.8

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	3	2	70.0%	0.0	0.0	
	East Side	2	2	80.0%	0.0	0.0	
	Subtotal	5	4	74.0%	0.0	0.0	
SB	East Side	2	3	135.0%	0.0	0.0	
	West Side	1	1	50.0%	0.0	0.0	
	Subtotal	3	3	106.7%	0.0	0.0	
EB	North Side	2	1	70.0%	2.2	5.1	
	South Side	1	2	150.0%	0.5	1.7	
	Subtotal	3	3	96.7%	2.8	5.1	
WB	South Side						
	North Side	1	1	60.0%	2.8	8.5	
	Subtotal	1	1	60.0%	2.8	8.5	
Total		12	10	86.7%	1.4	2.5	0.2

# Transit

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Transit PM Peak  
TSM Alt

## Intersection 2 Shields St/W Laurel St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn	2	19	2	95.0%	0.0	0.0	0.0
	Subtotal	2	19	2	95.0%	0.0	0.0	0.0
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	2	73	2	100.0%	88.5	32.9	26.9
	Through							
	Right Turn							
	Subtotal	2	73	2	100.0%	88.5	32.9	26.9
Total		4	92	4	97.5%	59.0	21.9	26.9

## Intersection 3 Shields St/W Plum St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn	2	18	2	100.0%	0.0	0.0	0.0
	Subtotal	2	18	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through	2	73	2	100.0%	13.7	5.5	4.2
	Right Turn							
	Subtotal	2	73	2	100.0%	13.7	5.5	4.2
EB	Left Turn							
	Through	11	211	11	99.1%	89.9	15.4	79.0
	Right Turn							
	Subtotal	11	211	11	99.1%	89.9	15.4	79.0
WB	Left Turn							
	Through	12	795	12	100.0%	90.1	26.5	298.4
	Right Turn							
	Subtotal	12	795	12	100.0%	90.1	26.5	298.4
Total		27	1,097	27	99.6%	73.0	11.1	381.6

## Intersection 4 Shields St/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	18	2	100.0%	78.4	37.4	5.9
	Right Turn							
	Subtotal	2	18	2	100.0%	78.4	37.4	5.9
SB	Left Turn							
	Through	2	73	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	73	2	100.0%	0.0	0.0	0.0
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		4	91	4	100.0%	52.3	24.9	5.9



# Transit

Vissim Post-Processor  
 Average Results from 10 Runs  
 Volume and Delay by Movement

Transit PM Peak  
 TSM Alt

## Intersection 5 Shields St/Lake St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	124	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	124	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through	2	75	2	100.0%	16.0	12.8	5.0
	Right Turn							
	Subtotal	2	75	2	100.0%	16.0	12.8	5.0
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		4	199	4	100.0%	10.6	8.5	5.0

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	26	2	100.0%	16.4	5.1	1.8
	Right Turn							
	Subtotal	2	26	2	100.0%	16.4	5.1	1.8
SB	Left Turn							
	Through	2	75	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	75	2	100.0%	0.0	0.0	0.0
EB	Left Turn	2	99	2	100.0%	57.5	6.2	23.7
	Through							
	Right Turn							
	Subtotal		99					23.7
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		4	200	4	100.0%	10.9	3.4	25.5

## Intersection 8 City Park Ave/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn	6	365	6	100.0%	74.5	10.6	113.3
	Subtotal	6	365	6	100.0%	74.5	10.6	113.3
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		6	365	6	100.0%	74.5	10.6	113.3

# Transit

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Transit      PM Peak  
TSM Alt

## Intersection 9                      Constitution Ave/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn	6	199	6	98.3%	43.2	17.4	35.8
	Subtotal	6	199	6	98.3%	43.2	17.4	35.8
EB	Left Turn	5	71	5	100.0%	38.9	14.6	11.5
	Through							
	Right Turn							
	Subtotal	5	71	5	100.0%	38.9	14.6	11.5
WB	Left Turn							
	Through							
	Right Turn	6	316	6	100.0%	18.1	10.5	23.8
	Subtotal	6	316	6	100.0%	18.1	10.5	23.8
<b>Total</b>		<b>17</b>	<b>586</b>	<b>17</b>	<b>99.4%</b>	<b>33.5</b>	<b>7.3</b>	<b>71.2</b>

## Intersection 11                      Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	1	14	1	100.0%	23.1	2.7	1.3
	Right Turn							
	Subtotal	1	14	0	0.0%	0.0	0.0	1.3
SB	Left Turn							
	Through	1	13	1	100.0%	30.9	5.3	1.7
	Right Turn							
	Subtotal	1	13	0	0.0%	0.0	0.0	1.7
EB	Left Turn							
	Through	5	71	5	100.0%	80.5	23.8	23.8
	Right Turn							
	Subtotal	5	71	5	100.0%	80.5	23.8	23.8
WB	Left Turn							
	Through	6	261	6	100.0%	80.8	19.6	87.9
	Right Turn							
	Subtotal	6	261	6	100.0%	80.8	19.6	87.9
<b>Total</b>		<b>13</b>	<b>359</b>	<b>11</b>	<b>84.6%</b>	<b>71.7</b>	<b>14.2</b>	<b>114.7</b>

## Intersection 12                      Overland Trail/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through	6	6	6	100.0%	23.6	7.3	0.6
	Right Turn							
	Subtotal	6	6	6	100.0%	23.6	7.3	0.6
WB	Left Turn							
	Through	6	7	0	0.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	6	7	0	0.0%	0.0	0.0	0.0
<b>Total</b>		<b>12</b>	<b>13</b>	<b>6</b>	<b>50.0%</b>	<b>13.5</b>	<b>4.2</b>	<b>0.6</b>

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
Traffic Calming Alt  
PM Peak Hour

Intersection 2		Shields St/W Laurel St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	858	835	97.3%	8.8	2.9	A	135
	Through	428	417	97.4%	11.9	3.8	B	91
	Right Turn							
	Subtotal	1,286	1,252	97.3%	9.9	3.0	A	226
SB	Left Turn	99	94	94.5%	51.1	13.9	D	88
	Through	971	933	96.1%	20.2	4.1	C	345
	Right Turn							
	Subtotal	1,070	1,027	96.0%	23.2	3.5	C	433
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	497	488	98.2%	81.9	26.2	F	733
	Through							
	Right Turn	154	151	98.1%	53.2	27.9	D	147
	Subtotal	651	639	98.2%	74.5	26.7	E	881
Total		3,007	2,918	97.0%	28.3	6.9	C	1540

Intersection 3		Shields St/W Plum St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	70	64	92.0%	206.8	174.7	F	244
	Through	1,205	1,177	97.7%	5.9	4.3	A	127
	Right Turn	56	52	93.6%	5.2	3.2	A	5
	Subtotal	1,331	1,294	97.2%	13.6	8.5	B	376
SB	Left Turn	18	18	98.3%	51.7	24.7	D	17
	Through	1,390	1,341	96.5%	13.4	5.4	B	328
	Right Turn	60	59	97.5%	14.3	8.9	B	15
	Subtotal	1,468	1,417	96.5%	13.8	5.7	B	360
EB	Left Turn	59	58	97.5%	49.9	9.2	D	53
	Through	23	33	141.3%	55.5	12.4	E	33
	Right Turn	61	56	91.0%	49.1	8.0	D	50
	Subtotal	143	146	101.7%	50.8	6.8	D	136
WB	Left Turn	56	49	86.8%	53.5	10.3	D	48
	Through	24	32	131.3%	54.8	14.6	D	32
	Right Turn	22	20	90.0%	19.2	11.5	B	7
	Subtotal	102	100	97.9%	46.0	7.6	D	86
Total		3,044	2,957	97.1%	16.3	4.9	B	958

Intersection 4		Shields St/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	273	255	93.2%	94.8	25.9	F	442
	Through	1,001	990	98.9%	36.9	15.9	D	669
	Right Turn	57	56	98.2%	27.1	16.5	C	28
	Subtotal	1,331	1,301	97.7%	48.3	17.7	D	1139
SB	Left Turn	10	9	91.0%	44.9	24.4	D	7
	Through	1,067	1,006	94.3%	33.4	8.9	C	616
	Right Turn	430	415	96.4%	23.7	6.5	C	180
	Subtotal	1,507	1,430	94.9%	30.7	7.8	C	804
EB	Left Turn	324	306	94.4%	53.2	9.8	D	298
	Through	48	48	100.8%	49.9	10.9	D	44
	Right Turn	379	366	96.6%	43.9	9.0	D	295
	Subtotal	751	720	95.9%	48.2	8.4	D	637
WB	Left Turn	61	61	100.5%	49.4	8.2	D	56
	Through	36	36	99.7%	45.4	5.8	D	30
	Right Turn	6	6	96.7%	32.7	33.6	C	3
	Subtotal	103	103	100.0%	47.3	4.6	D	89
Total		3,692	3,554	96.3%	41.6	6.8	D	2669

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
Traffic Calming Alt  
PM Peak Hour

Intersection 5		Shields St/Lake St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn							
	Through	1,268	1,266	99.9%	2.9	0.7	A	66
	Right Turn	52	54	103.5%	2.6	1.7	A	3
	Subtotal	1,320	1,320	100.0%	2.8	0.7	A	69
SB	Left Turn	92	87	94.8%	39.0	7.4	D	62
	Through	1,360	1,290	94.8%	14.1	5.3	B	333
	Right Turn							
	Subtotal	1,452	1,377	94.8%	15.7	5.4	B	395
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	117	119	101.9%	52.2	10.1	D	114
	Through							
	Right Turn	157	155	98.5%	9.5	2.8	A	27
	Subtotal	274	274	100.0%	29.3	7.0	C	141
Total		3,046	2,971	97.5%	11.6	2.8	B	605

Intersection 6		Shields St/Prospect			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	160	154	96.2%	47.2	10.6	D	133
	Through	908	909	100.1%	34.2	2.3	C	570
	Right Turn	137	133	97.2%	23.0	4.0	C	56
	Subtotal	1,205	1,196	99.2%	34.7	2.9	C	760
SB	Left Turn	218	228	104.6%	48.4	7.7	D	202
	Through	1,080	1,003	92.8%	21.6	4.4	C	397
	Right Turn	179	168	94.1%	12.9	2.8	B	40
	Subtotal	1,477	1,399	94.7%	24.9	4.3	C	639
EB	Left Turn	158	162	102.2%	67.5	16.4	E	200
	Through	396	393	99.3%	38.6	3.7	D	279
	Right Turn	159	159	100.1%	17.5	2.3	B	51
	Subtotal	713	714	100.1%	41.1	5.9	D	530
WB	Left Turn	196	194	99.1%	92.8	12.8	F	330
	Through	637	619	97.2%	81.6	12.2	F	927
	Right Turn	254	248	97.4%	87.5	16.1	F	397
	Subtotal	1,087	1,061	97.6%	85.2	12.5	F	1654
Total		4,482	4,370	97.5%	45.8	4.4	D	3583

Intersection 8		City Park Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	155	144	92.8%	95.4	24.0	F	252
	Through	107	100	93.8%	65.1	21.8	E	120
	Right Turn	87	87	100.3%	56.4	22.7	E	90
	Subtotal	349	332	95.0%	75.4	23.1	E	462
SB	Left Turn	73	68	93.4%	67.0	14.8	E	84
	Through	101	96	95.3%	52.0	17.8	D	92
	Right Turn	51	55	107.3%	35.0	15.5	C	35
	Subtotal	225	219	97.4%	52.1	15.6	D	211
EB	Left Turn	61	57	94.1%	76.3	12.6	E	80
	Through	508	487	95.8%	34.0	6.1	C	304
	Right Turn	96	95	98.6%	25.6	6.8	C	44
	Subtotal	665	639	96.1%	36.2	5.9	D	428
WB	Left Turn	89	85	95.7%	74.7	10.8	E	117
	Through	491	463	94.3%	16.3	1.8	B	139
	Right Turn	77	70	90.3%	16.3	3.8	B	21
	Subtotal	657	618	94.0%	23.9	3.7	C	276
Total		1,896	1,808	95.3%	41.5	4.1	D	1377

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
Traffic Calming Alt  
PM Peak Hour

Intersection 9		Constitution Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	2	2	115.0%	15.8	22.9	B	1
	Through	26	24	93.8%	26.5	6.6	C	12
	Right Turn	35	33	94.0%	22.0	7.2	C	13
	Subtotal	63	60	94.6%	24.5	3.5	C	26
SB	Left Turn	36	36	99.7%	31.9	13.1	C	21
	Through	22	24	107.3%	24.0	15.0	C	10
	Right Turn	74	78	105.7%	23.6	6.1	C	34
	Subtotal	132	138	104.3%	25.6	4.8	C	65
EB	Left Turn	47	51	107.7%	67.8	26.8	E	63
	Through	531	508	95.6%	14.9	4.3	B	139
	Right Turn	6	6	100.0%	9.4	7.2	A	1
	Subtotal	584	564	96.6%	19.9	6.5	B	203
WB	Left Turn	39	40	101.8%	49.4	11.0	D	36
	Through	622	581	93.4%	26.8	5.0	C	286
	Right Turn	47	49	104.5%	26.7	4.3	C	24
	Subtotal	708	670	94.6%	28.1	4.9	C	346
Total		1,487	1,431	96.2%	24.7	1.9	C	640

Intersection 11		Taft Hill Rd/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	136	131	96.0%	52.7	18.6	D	126
	Through	577	559	96.8%	50.0	20.5	D	512
	Right Turn	129	127	98.2%	55.3	23.0	E	129
	Subtotal	842	816	96.9%	51.2	20.2	D	767
SB	Left Turn	106	97	91.6%	93.3	14.4	F	166
	Through	768	704	91.7%	86.2	11.2	F	1113
	Right Turn	84	75	89.8%	88.7	8.7	F	123
	Subtotal	958	877	91.5%	87.5	9.8	F	1401
EB	Left Turn	162	160	98.8%	62.5	14.7	E	183
	Through	305	299	98.0%	43.4	10.8	D	238
	Right Turn	121	115	95.4%	69.5	27.1	E	147
	Subtotal	588	574	97.7%	54.2	13.1	D	568
WB	Left Turn	178	160	89.8%	62.6	14.7	E	184
	Through	319	304	95.2%	34.9	8.2	C	194
	Right Turn	77	73	94.2%	43.0	6.6	D	57
	Subtotal	574	536	93.4%	44.6	8.9	D	435
Total		2,962	2,803	94.6%	61.8	5.6	E	3171

Intersection 12		Overland Trail/W Elizabeth St			Roundabout			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	2	1	70.0%	3.9	5.4	A	0
	Through	322	326	101.4%	4.8	1.3	A	29
	Right Turn	83	81	97.5%	4.3	0.9	A	6
	Subtotal	407	409	100.4%	4.7	1.1	A	35
SB	Left Turn	73	70	95.8%	6.4	2.5	A	8
	Through	537	538	100.1%	6.0	1.3	A	59
	Right Turn	7	6	78.6%	5.3	3.9	A	1
	Subtotal	617	613	99.4%	6.0	1.3	A	68
EB	Left Turn	2	2	100.0%	2.0	2.8	A	0
	Through							
	Right Turn	3	3	106.7%	4.9	6.8	A	0
	Subtotal	5	5	104.0%	5.0	6.1	A	0
WB	Left Turn	69	61	89.0%	6.2	1.6	A	7
	Through	5	11	226.0%	11.1	3.7	B	2
	Right Turn	67	63	93.6%	5.8	1.5	A	7
	Subtotal	141	135	96.0%	6.4	1.0	A	16
Total		1,170	1,163	99.4%	5.6	0.9	A	119

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle PM Peak  
Traffic Calming Alt

## Intersection 2 Shields St/W Laurel St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	3	3	100.0%	7.5	8.7	0.4
	Right Turn	5	5	100.0%	1.7	2.1	0.1
	Subtotal	8	8	100.0%	5.8	5.4	0.5
SB	Left Turn	1	0	0.0%	0.0	0.0	0.0
	Through	1	0	0.0%	0.0	0.0	0.0
	Right Turn						
	Subtotal	2	0	0.0%	0.0	0.0	0.0
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	6	5	90.0%	53.0	41.2	5.3
	Through						
	Right Turn	7	6	90.0%	27.1	26.5	3.2
	Subtotal	13	12	90.0%	45.6	26.0	8.5
Total		23	20	85.7%	25.8	17.0	9.0

## Intersection 3 Shields St/W Plum St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	2	220.0%	71.5	135.4	1.2
	Through	7	6	88.6%	4.8	6.8	0.6
	Right Turn	3	1	23.3%	0.0	0.0	0.0
	Subtotal	11	9	82.7%	27.1	42.0	1.7
SB	Left Turn						
	Through	5	3	68.0%	3.3	8.6	0.3
	Right Turn	2	2	105.0%	1.2	1.0	0.0
	Subtotal	7	6	78.6%	2.9	4.3	0.3
EB	Left Turn	1	1	120.0%	21.5	38.3	0.4
	Through	36	35	97.2%	41.1	11.0	24.7
	Right Turn						
	Subtotal	37	36	97.8%	41.8	9.6	25.0
WB	Left Turn	2	2	115.0%	32.6	39.0	1.1
	Through	119	116	97.2%	42.2	8.0	83.7
	Right Turn	1	0	0.0%	0.0	0.0	0.0
	Subtotal	122	118	96.7%	42.8	8.1	84.8
Total		177	169	95.4%	40.93	6.8	111.90

## Intersection 4 Shields St/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	2	0	0.0%	0.0	0.0	0
	Through	9	6	68.9%	5.9	9.8	0.9
	Right Turn	5	3	68.0%	1.7	5.4	0.1
	Subtotal	16	10	60.0%	5.9	9.5	1.0
SB	Left Turn	1	0	0.0%	0.0	0.0	0.0
	Through	3	2	60.0%	10.7	21.9	0.5
	Right Turn	3	3	96.7%	0.5	1.4	0.0
	Subtotal	7	5	67.1%	7.9	15.4	0.6
EB	Left Turn	1	1	110.0%	17.4	37.0	0.3
	Through	12	13	110.8%	47.5	20.5	9.5
	Right Turn	1	1	100.0%	0.0	0.0	0.0
	Subtotal	14	15	110.0%	45.4	21.7	9.8
WB	Left Turn	3	2	80.0%	15.7	21.3	0.8
	Through	102	103	100.8%	42.7	5.1	72.6
	Right Turn	1	1	70.0%	0.5	1.5	0.0
	Subtotal	106	106	99.9%	42.2	5.5	73.4
Total		143	136	94.8%	38.5	5.7	84.8

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle PM Peak  
Traffic Calming Alt

## Intersection 5 Shields St/Lake St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	9	6	68.9%	4.8	6.8	0.7
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	7	5	75.7%	8.0	10.8	0.9
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	8	7	85.0%	48.0	26.5	6.4
	Through						
	Right Turn						
	Subtotal						
Total		31	25	79.0%	17.9	8.8	9.0

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	0	0.0%	0.0	0.0	0
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	15	12	79.3%	11.9	12.0	3.0
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	9	7	80.0%	90.3	34.0	13.5
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		53	43	81.7%	33.0	9.0	29.9

## Intersection 8 City Park Ave/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	3	3	90.0%	27.0	40.7	1
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	8	7	87.5%	32.3	33.2	4.3
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	1	1	110.0%	29.4	40.1	0.5
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	10	12	115.0%	67.1	19.4	11.2
	Through						
	Right Turn						
	Subtotal						
Total		169	168	99.6%	20.2	5.0	50.9

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle PM Peak  
Traffic Calming Alt

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	2	2	75.0%	0.4	1.2	0.0
	Through	2	2	105.0%	4.4	8.5	0.1
	Right Turn	2	2	105.0%	4.4	8.5	0.1
	Subtotal	4	4	90.0%	4.6	8.4	0.2
SB	Left Turn	3	4	116.7%	20.4	16.7	1.0
	Through	12	12	97.5%	17.7	11.6	3.5
	Right Turn	11	10	93.6%	11.4	6.3	2.1
	Subtotal	26	26	98.1%	18.2	5.3	6.7
EB	Left Turn	1	0	0.0%	0.0	0.0	0.0
	Through	38	39	102.4%	11.4	7.5	7.2
	Right Turn	1	0	0.0%	0.0	0.0	0.0
	Subtotal	39	39	99.7%	11.4	7.5	7.2
WB	Left Turn	0	0	0.0%	0.0	0.0	0.0
	Through	69	69	99.9%	11.0	3.4	12.7
	Right Turn	4	3	85.0%	5.0	9.1	0.3
	Subtotal	73	72	99.0%	11.0	3.3	13.0
<b>Total</b>		<b>142</b>	<b>140</b>	<b>98.8%</b>	<b>13.0</b>	<b>2.4</b>	<b>27.1</b>

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	0	40.0%	0.0	0.0	0
	Through	2	1	60.0%	18.0	26.5	0.6
	Right Turn	2	2	85.0%	14.4	22.8	0.5
	Subtotal	5	3	66.0%	24.1	24.2	1.1
SB	Left Turn	0	0	0.0%	0.0	0.0	0
	Through	0	0	0.0%	0.0	0.0	0
	Right Turn	0	0	0.0%	0.0	0.0	0
	Subtotal	0	0	0.0%	0.0	0.0	0
EB	Left Turn	0	0	0.0%	0.0	0.0	0
	Through	47	48	101.9%	36.4	7.3	28.5
	Right Turn	0	0	0.0%	0.0	0.0	0
	Subtotal	47	48	101.9%	36.4	7.3	28.5
WB	Left Turn	0	0	0.0%	0.0	0.0	0
	Through	47	48	101.9%	41.2	5.1	32.2
	Right Turn	1	1	110.0%	9.4	19.8	0.2
	Subtotal	48	49	102.1%	41.4	4.9	32.4
<b>Total</b>		<b>100</b>	<b>100</b>	<b>100.2%</b>	<b>38.6</b>	<b>4.8</b>	<b>62.0</b>

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	0	0	0.0%	0.0	0.0	0
	Through	44	41	94.1%	1.6	1.1	1.2
	Right Turn	4	5	117.5%	1.0	1.6	0.1
	Subtotal	48	46	96.0%	1.6	1.1	1.2
SB	Left Turn	0	0	0.0%	0.0	0.0	0
	Through	29	25	84.8%	1.4	0.9	0.7
	Right Turn	0	0	0.0%	0.0	0.0	0
	Subtotal	29	25	84.8%	1.4	0.9	0.7
EB	Left Turn	0	0	0.0%	0.0	0.0	0
	Through	0	0	0.0%	0.0	0.0	0
	Right Turn	0	0	0.0%	0.0	0.0	0
	Subtotal	0	0	0.0%	0.0	0.0	0
WB	Left Turn	9	8	88.9%	10.3	13.9	1.5
	Through	0	0	0.0%	0.0	0.0	0
	Right Turn	3	3	106.7%	1.1	2.1	0.1
	Subtotal	12	11	93.3%	9.1	11.7	1.6
<b>Total</b>		<b>89</b>	<b>82</b>	<b>92.0%</b>	<b>3.0</b>	<b>2.2</b>	<b>3.5</b>



# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk PM Peak  
Traffic Calming Alt

## Intersection 2 Shields St/W Laurel St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through						
	Right Turn	11	10	87.3%	47.4	34.0	
	Subtotal	11	10	87.3%	47.4	34.0	
SB	Left Turn	1	2	160.0%	17.0	31.0	
	Through						
	Right Turn						
	Subtotal	1	2	160.0%	17.0	31.0	
EB	Left Turn	13	13	101.5%	56.1	23.1	
	Through						
	Right Turn						
	Subtotal	13	13	101.5%	56.1	23.1	
WB	Left Turn						
	Through						
	Right Turn	39	38	96.7%	61.3	11.1	
	Subtotal	39	38	96.7%	61.3	11.1	
Total		64	62	97.0%	57.1	7.2	59.1

## Intersection 3 Shields St/W Plum St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	80.0%	1.4	4.6	
	East Side	14	14	98.6%	66.0	28.3	
	Subtotal	15	15	97.3%	67.4	24.7	
SB	East Side	1	1	90.0%	8.9	28.1	
	West Side	9	9	103.3%	75.6	23.2	
	Subtotal	10	10	102.0%	75.9	23.2	
EB	North Side	24	25	105.0%	54.9	14.3	
	South Side	15	14	95.3%	48.7	21.7	
	Subtotal	39	40	101.3%	53.8	12.2	
WB	South Side	31	32	102.3%	56.6	15.8	
	North Side	62	58	94.2%	54.7	12.3	
	Subtotal	93	90	96.9%	55.3	7.8	
Total		157	154	98.3%	57.6	6.1	148.1

## Intersection 4 Shields St/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	5	5	94.0%	60.5	38.6	
	East Side	3	3	113.3%	40.3	43.6	
	Subtotal	8	8	101.3%	68.0	34.0	
SB	East Side	4	3	85.0%	50.5	55.8	
	West Side	4	4	90.0%	40.4	37.5	
	Subtotal	8	7	87.5%	80.9	28.0	
EB	North Side	20	21	103.0%	60.7	9.5	
	South Side	14	13	93.6%	59.2	19.9	
	Subtotal	34	34	99.1%	59.2	10.8	
WB	South Side	68	71	104.6%	49.1	8.0	
	North Side	44	43	96.6%	54.6	15.5	
	Subtotal	112	114	101.4%	51.5	5.9	
Total		162	162	100.2%	55.0	4.8	149.0

## Intersection 5 Shields St/Lake St

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk PM Peak  
Traffic Calming Alt

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side						
	East Side	6	6	103.3%	29.2	30.0	
	Subtotal	6	6	103.3%	29.2	30.0	
SB	East Side	9	9	104.4%	46.0	29.0	
	West Side						
	Subtotal	9	9	104.4%	46.0	29.0	
EB	North Side	5	4	80.0%	36.5	44.2	
	South Side						
	Subtotal	5	4	80.0%	36.5	44.2	
WB	South Side						
	North Side	5	6	110.0%	40.2	27.7	
	Subtotal	5	6	110.0%	40.2	27.7	
Total		25	25	100.4%	42.5	14.5	17.8

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	8	8	103.8%	56.3	30.8	
	East Side	8	8	105.0%	102.4	45.3	
	Subtotal	16	17	104.4%	85.2	26.2	
SB	East Side	21	22	104.8%	52.2	17.3	
	West Side	10	11	109.0%	54.3	27.2	
	Subtotal	31	33	106.1%	55.2	10.1	
EB	North Side	3	2	66.7%	43.3	46.6	
	South Side	6	7	110.0%	41.1	31.4	
	Subtotal	9	9	95.6%	48.2	29.3	
WB	South Side	7	6	88.6%	44.2	39.0	
	North Side	8	9	111.3%	66.6	34.8	
	Subtotal	15	15	100.7%	68.4	23.0	
Total		71	73	103.2%	63.4	9.6	77.5

## Intersection 7 Ped Crossing/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	6	6	95.0%	0.0	0.0	
	East Side	2	2	90.0%	0.3	0.8	
	Subtotal	8	8	93.8%	0.2	0.8	
SB	East Side	1	2	170.0%	6.3	11.5	
	West Side	6	6	93.3%	0.0	0.0	
	Subtotal	7	7	104.3%	3.0	5.8	
EB	North Side						
	South Side						
	Subtotal						
WB	South Side						
	North Side						
	Subtotal						
Total		15	15	98.7%	1.8	3.4	0.5

## Intersection 8 City Park Ave/W Elizabeth St

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk PM Peak  
Traffic Calming Alt

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	32	32	99.1%	60.1	21.2	
	East Side	19	20	105.8%	60.3	17.4	
	Subtotal	51	52	101.6%	59.3	18.5	
SB	East Side	42	41	97.6%	52.8	15.6	
	West Side	19	17	90.0%	55.2	15.0	
	Subtotal	61	58	95.2%	54.5	5.9	
EB	North Side	35	37	104.6%	59.2	11.2	
	South Side	37	36	98.4%	56.7	8.8	
	Subtotal	72	73	101.4%	58.2	6.8	
WB	South Side	32	34	105.9%	53.2	14.5	
	North Side	35	37	104.6%	59.2	11.2	
	Subtotal	55	60	109.3%	56.5	7.8	
Total		239	243	101.7%	57.4	4.4	232.7

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	110.0%	13.4	22.9	
	East Side	2	3	135.0%	14.1	19.7	
	Subtotal	3	4	126.7%	15.7	21.1	
SB	East Side	7	7	94.3%	32.3	19.1	
	West Side	1	0	40.0%	6.0	16.3	
	Subtotal	8	7	87.5%	31.6	19.0	
EB	North Side	6	5	88.3%	16.7	15.7	
	South Side	8	8	103.8%	12.8	10.1	
	Subtotal	14	14	97.1%	18.9	10.9	
WB	South Side	6	6	93.3%	17.0	15.3	
	North Side	9	10	111.1%	16.2	17.3	
	Subtotal	15	16	104.0%	21.1	12.5	
Total		40	40	100.0%	23.2	4.9	15.5

## Intersection 10 Ped Signal/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	80.0%	10.6	20.8	
	East Side						
	Subtotal	1	1	80.0%	10.6	20.8	
SB	East Side	3	3	90.0%	18.5	25.1	
	West Side						
	Subtotal	3	3	90.0%	18.5	25.1	
EB	North Side						
	South Side						
	Subtotal						
WB	South Side						
	North Side						
	Subtotal						
Total		4	4	87.5%	21.6	19.1	1.3

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)	Percent	Total Delay (sec/person)	Total Person Delay (min)
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# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk PM Peak  
Traffic Calming Alt

Direction	Movement	Volume (pph)	Average	Percent	Average	Std. Dev.	Delay (min)
NB	West Side	7	7	94.3%	27.1	25.4	
	East Side	4	4	87.5%	21.6	27.0	
	Subtotal	11	10	91.8%	30.2	23.1	
SB	East Side	3	3	93.3%	23.6	33.5	
	West Side	9	9	104.4%	39.0	20.8	
	Subtotal	12	12	101.7%	41.5	20.3	
EB	North Side	5	4	78.0%	26.8	35.3	
	South Side	8	10	122.5%	36.5	23.0	
	Subtotal	13	14	105.4%	49.0	14.2	
WB	South Side	7	7	94.3%	38.7	23.1	
	North Side	7	8	112.9%	45.5	22.1	
	Subtotal	14	15	103.6%	43.7	11.8	
Total		50	51	101.0%	41.5	9.2	34.9

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	3	3	83.3%	0.8	2.5	
	East Side	2	2	90.0%	0.0	0.0	
	Subtotal	5	4	86.0%	0.8	2.5	
SB	East Side	2	2	95.0%	0.0	0.0	
	West Side	1	1	100.0%	0.0	0.0	
	Subtotal	3	3	96.7%	0.0	0.0	
EB	North Side	2	2	110.0%	0.0	0.0	
	South Side	1	1	70.0%	0.0	0.0	
	Subtotal	3	3	96.7%	0.0	0.0	
WB	South Side						
	North Side	1	1	120.0%	0.0	0.0	
	Subtotal	1	1	120.0%	0.0	0.0	
Total		12	11	94.2%	0.3	1.0	0.1

Vissim Post-Processor  
 Average Results from 10 Runs  
 Volume and Delay by Movement

Transit PM Peak  
 Traffic Calming

Intersection 2 Shields St/W Laurel St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn	2	19	2	100.0%	0.0	0.0	0.0
	Subtotal	2	19	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	2	73	2	100.0%	98.4	43.2	29.9
	Through							
	Right Turn							
	Subtotal	2	73	2	100.0%	98.4	43.2	29.9
Total		4	92	4	100.0%	65.6	28.8	29.9

Intersection 3 Shields St/W Plum St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn	2	18	2	100.0%	1.5	1.5	0.1
	Subtotal	2	18	2	100.0%	1.5	1.5	0.1
SB	Left Turn							
	Through	2	73	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	73	2	100.0%	0.0	0.0	0.0
EB	Left Turn							
	Through	11	211	11	100.0%	94.9	4.2	83.4
	Right Turn							
	Subtotal	11	211	11	100.0%	94.9	4.2	83.4
WB	Left Turn							
	Through	12	795	12	98.3%	64.9	5.1	214.9
	Right Turn							
	Subtotal	12	795	12	98.3%	64.9	5.1	214.9
Total		27	1,097	27	99.3%	60.0	2.8	298.4

Intersection 4 Shields St/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	18	2	100.0%	62.8	9.0	4.7
	Right Turn							
	Subtotal	2	18	2	100.0%	62.8	9.0	4.7
SB	Left Turn							
	Through	2	73	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	73	2	100.0%	0.0	0.0	0.0
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		4	91	4	100.0%	41.8	6.0	4.7

Vissim Post-Processor  
 Average Results from 10 Runs  
 Volume and Delay by Movement

Transit PM Peak  
 Traffic Calming

Intersection 5 Shields St/Lake St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	124	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	124	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through	2	75	2	100.0%	21.0	12.6	6.6
	Right Turn							
	Subtotal	2	75	2	100.0%	21.0	12.6	6.6
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		4	199	4	100.0%	14.0	8.4	6.6

Intersection 6 Shields St/Prospect

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	26	2	100.0%	20.5	6.3	2.2
	Right Turn							
	Subtotal	2	26	2	100.0%	20.5	6.3	2.2
SB	Left Turn							
	Through	2	75	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	75	2	100.0%	0.0	0.0	0.0
EB	Left Turn	2	99	2	100.0%	57.5	6.2	23.7
	Through							
	Right Turn							
	Subtotal		99					23.7
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		4	200	4	100.0%	13.6	4.2	25.9

Intersection 8 City Park Ave/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn	6	365	6	100.0%	47.3	18.4	72.0
	Subtotal	6	365	6	100.0%	47.3	18.4	72.0
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		6	365	6	100.0%	47.3	18.4	72.0

Vissim Post-Processor  
 Average Results from 10 Runs  
 Volume and Delay by Movement

Transit PM Peak  
 Traffic Calming

Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn	6	199	6	100.0%	6.6	7.4	5.5
	Subtotal	6	199	6	100.0%	6.6	7.4	5.5
EB	Left Turn	5	74	5	100.0%	44.4	24.7	13.7
	Through							
	Right Turn							
	Subtotal	5	74	5	100.0%	44.4	24.7	13.7
WB	Left Turn							
	Through							
	Right Turn	6	316	6	100.0%	23.6	12.4	31.1
	Subtotal	6	316	6	100.0%	23.6	12.4	31.1
Total		17	589	17	100.0%	25.6	7.1	50.3

Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	1	14	1	100.0%	50.0	20.5	2.9
	Right Turn							
	Subtotal	1	14	1	100.0%	0.0	0.0	2.9
SB	Left Turn							
	Through	1	13	1	100.0%	86.2	11.2	4.7
	Right Turn							
	Subtotal	1	13	1	100.0%	0.0	0.0	4.7
EB	Left Turn							
	Through	5	71	5	100.0%	71.6	16.5	21.2
	Right Turn							
	Subtotal	5	71	5	100.0%	71.6	16.5	21.2
WB	Left Turn							
	Through	6	261	6	100.0%	62.1	25.1	67.6
	Right Turn							
	Subtotal	6	261	6	100.0%	62.1	25.1	67.6
Total		13	359	11	84.6%	59.8	14.4	96.3

Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through	6	6	6	100.0%	20.9	14.4	0.5
	Right Turn							
	Subtotal	6	6	6	100.0%	20.9	14.4	0.5
WB	Left Turn							
	Through	6	7	6	100.0%	12.8	5.6	0.4
	Right Turn							
	Subtotal	6	7	6	100.0%	12.8	5.6	0.4
Total		12	13	12	100.0%	17.2	9.0	0.9

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
MAX Alt  
PM Peak Hour

Intersection 2		Shields St/W Laurel St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	858	826	96.3%	8.3	2.2	A	125
	Through	428	415	97.0%	9.5	2.0	A	72
	Right Turn							
	Subtotal	1,286	1,241	96.5%	8.7	1.9	A	197
SB	Left Turn	99	94	95.4%	49.3	12.7	D	85
	Through	971	938	96.6%	20.9	4.9	C	359
	Right Turn							
	Subtotal	1,070	1,032	96.5%	23.6	4.3	C	444
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	497	494	99.3%	83.6	26.8	F	757
	Through							
	Right Turn	154	149	96.9%	55.8	29.8	E	153
	Subtotal	651	643	98.7%	76.6	27.6	E	909
Total		3,007	2,916	97.0%	28.6	7.4	C	1551

Intersection 3		Shields St/W Plum St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	70	61	86.9%	191.4	105.6	F	213
	Through	1,205	1,167	96.8%	4.1	1.7	A	88
	Right Turn	56	55	98.6%	2.8	1.4	A	3
	Subtotal	1,331	1,283	96.4%	10.7	4.3	B	304
SB	Left Turn	18	17	93.3%	37.6	16.3	D	12
	Through	1,390	1,351	97.2%	16.2	6.2	B	401
	Right Turn	60	57	95.5%	16.2	9.5	B	17
	Subtotal	1,468	1,425	97.1%	16.4	6.3	B	430
EB	Left Turn	59	56	95.4%	51.3	10.3	D	53
	Through	23	28	121.7%	51.4	14.8	D	26
	Right Turn	61	56	92.3%	51.8	7.9	D	53
	Subtotal	143	141	98.3%	51.1	6.4	D	133
WB	Left Turn	56	61	108.0%	57.3	12.5	E	64
	Through	24	20	82.9%	47.9	17.4	D	17
	Right Turn	22	20	88.6%	22.2	10.6	C	8
	Subtotal	102	100	97.9%	48.2	10.4	D	89
Total		3,044	2,948	96.8%	16.4	4.7	B	956

Intersection 4		Shields St/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	273	259	95.0%	93.2	22.0	F	443
	Through	1,001	980	97.9%	30.5	10.2	C	547
	Right Turn	57	57	100.7%	26.3	13.4	C	28
	Subtotal	1,331	1,297	97.4%	42.3	12.3	D	1018
SB	Left Turn	10	9	94.0%	47.3	28.2	D	8
	Through	1,067	1,008	94.5%	44.1	6.6	D	815
	Right Turn	430	428	99.6%	32.7	5.6	C	256
	Subtotal	1,507	1,446	95.9%	40.8	5.8	D	1080
EB	Left Turn	324	307	94.7%	77.2	11.1	E	434
	Through	48	45	93.3%	78.9	14.2	E	65
	Right Turn	379	357	94.3%	70.9	8.7	E	464
	Subtotal	751	709	94.4%	74.1	9.3	E	964
WB	Left Turn	61	61	99.7%	49.2	10.6	D	55
	Through	36	36	99.7%	43.1	5.9	D	28
	Right Turn	6	6	95.0%	29.0	38.6	C	3
	Subtotal	103	102	99.4%	47.5	7.2	D	86
Total		3,692	3,554	96.2%	48.1	4.7	D	3148



# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
MAX Alt  
PM Peak Hour

Intersection 5		Shields St/Lake St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn							
	Through	1,268	1,264	99.7%	2.7	0.2	A	62
	Right Turn	52	54	103.3%	2.4	1.0	A	2
	Subtotal	1,320	1,318	99.8%	2.7	0.2	A	64
SB	Left Turn	92	90	97.6%	34.0	8.0	C	56
	Through	1,360	1,286	94.6%	13.6	4.0	B	321
	Right Turn							
	Subtotal	1,452	1,376	94.8%	15.0	4.1	B	377
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	117	121	103.1%	51.4	8.2	D	114
	Through							
	Right Turn	157	154	98.0%	10.4	3.9	B	29
	Subtotal	274	274	100.1%	28.2	5.3	C	143
Total		3,046	2,968	97.4%	11.0	2.1	B	584

Intersection 6		Shields St/Prospect			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	160	155	96.7%	52.7	8.0	D	150
	Through	908	906	99.8%	35.4	2.3	D	588
	Right Turn	137	133	97.2%	23.1	3.6	C	56
	Subtotal	1,205	1,194	99.1%	36.4	2.6	D	793
SB	Left Turn	218	226	103.5%	52.8	10.3	D	218
	Through	1,080	1,005	93.1%	21.2	4.6	C	391
	Right Turn	179	171	95.5%	13.3	2.9	B	42
	Subtotal	1,477	1,402	94.9%	25.3	5.4	C	651
EB	Left Turn	158	159	100.7%	68.5	16.5	E	200
	Through	396	395	99.7%	39.6	3.2	D	287
	Right Turn	159	160	100.3%	18.3	2.6	B	53
	Subtotal	713	714	100.1%	41.4	5.8	D	540
WB	Left Turn	196	193	98.7%	93.6	17.0	F	332
	Through	637	623	97.8%	82.5	15.2	F	942
	Right Turn	254	248	97.7%	86.3	18.5	F	393
	Subtotal	1,087	1,065	98.0%	85.6	15.7	F	1667
Total		4,482	4,375	97.6%	46.8	5.5	D	3652

Intersection 8		City Park Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	155	147	94.6%	51.2	10.6	D	137
	Through	107	94	87.9%	65.0	14.4	E	112
	Right Turn	87	84	97.0%	64.0	13.9	E	99
	Subtotal	349	325	93.2%	58.5	11.3	E	349
SB	Left Turn	73	71	97.3%	30.4	5.7	C	40
	Through	101	98	97.4%	47.3	10.9	D	85
	Right Turn	51	48	94.5%	26.0	10.9	C	23
	Subtotal	225	218	96.7%	37.7	6.9	D	148
EB	Left Turn	61	57	93.0%	85.8	11.8	F	89
	Through	508	482	94.9%	36.2	5.0	D	320
	Right Turn	96	97	101.1%	13.6	3.5	B	24
	Subtotal	665	636	95.6%	37.3	5.4	D	433
WB	Left Turn	89	86	96.6%	110.2	18.4	F	174
	Through	491	470	95.8%	45.8	16.9	D	395
	Right Turn	77	71	91.9%	28.6	11.2	C	37
	Subtotal	657	627	95.5%	53.3	16.7	D	606
Total		1,896	1,806	95.2%	47.4	7.1	D	1536

# Vehicles

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
MAX Alt  
PM Peak Hour

Intersection 9		Constitution Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	2	2	95.0%	12.2	18.5	B	0
	Through	26	23	89.6%	19.1	9.3	B	8
	Right Turn	35	33	93.1%	23.2	7.8	C	14
	Subtotal	63	58	91.7%	22.5	5.0	C	22
SB	Left Turn	36	37	102.2%	26.1	8.8	C	18
	Through	22	22	100.5%	28.4	9.3	C	12
	Right Turn	74	76	103.2%	25.2	5.4	C	35
	Subtotal	132	135	102.5%	26.1	3.8	C	64
EB	Left Turn	47	44	94.3%	34.6	7.4	C	28
	Through	531	508	95.6%	14.2	3.3	B	132
	Right Turn	6	7	110.0%	16.1	11.7	B	2
	Subtotal	584	559	95.6%	15.8	3.1	B	162
WB	Left Turn	39	40	103.3%	40.9	6.8	D	30
	Through	622	584	93.9%	19.7	9.3	B	211
	Right Turn	47	51	107.7%	13.7	10.9	B	13
	Subtotal	708	675	95.4%	20.4	9.0	C	254
Total		1,487	1,427	95.9%	19.1	4.6	B	502

Intersection 11		Taft Hill Rd/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	136	131	96.0%	54.2	17.2	D	130
	Through	577	563	97.6%	48.6	18.4	D	502
	Right Turn	129	125	96.7%	51.4	17.8	D	118
	Subtotal	842	818	97.2%	50.0	17.7	D	749
SB	Left Turn	106	93	87.9%	104.2	25.6	F	178
	Through	768	712	92.7%	89.3	8.3	F	1165
	Right Turn	84	75	88.9%	92.9	9.8	F	127
	Subtotal	958	880	91.8%	91.6	9.8	F	1470
EB	Left Turn	162	159	98.0%	73.5	24.1	E	214
	Through	305	298	97.7%	52.6	24.0	D	287
	Right Turn	121	118	97.3%	81.0	35.0	F	175
	Subtotal	588	575	97.7%	64.9	26.2	E	676
WB	Left Turn	178	161	90.7%	65.4	14.1	E	193
	Through	319	307	96.2%	31.8	6.5	C	179
	Right Turn	77	72	93.8%	42.1	9.5	D	56
	Subtotal	574	540	94.1%	43.8	7.5	D	428
Total		2,962	2,813	95.0%	64.7	8.3	E	3323

Intersection 12		Overland Trail/W Elizabeth St			Roundabout			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	2	2	95.0%	5.5	7.1	A	0
	Through	322	327	101.6%	5.2	1.4	A	31
	Right Turn	83	82	98.7%	4.3	0.9	A	6
	Subtotal	407	411	100.9%	5.1	1.2	A	38
SB	Left Turn	73	70	95.9%	6.2	2.7	A	8
	Through	537	542	100.9%	6.2	1.5	A	62
	Right Turn	7	6	82.9%	5.3	5.2	A	1
	Subtotal	617	618	100.1%	6.2	1.5	A	70
EB	Left Turn	2	2	100.0%	2.0	3.6	A	0
	Through							
	Right Turn	3	3	103.3%	6.8	7.8	A	0
	Subtotal	5	5	102.0%	6.4	7.2	A	0
WB	Left Turn	69	63	91.3%	6.0	1.9	A	7
	Through	5	11	220.0%	6.6	3.2	A	1
	Right Turn	67	63	94.6%	7.1	2.1	A	8
	Subtotal	141	137	97.4%	6.6	1.7	A	16
Total		1,170	1,171	100.1%	5.9	0.6	A	125

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle PM Peak  
MAX Alt

## Intersection 2 Shields St/W Laurel St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	3	3	96.7%	6.0	9.1	0.3
	Right Turn	5	5	90.0%	1.8	3.1	0.1
	Subtotal	8	7	92.5%	5.1	5.7	0.4
SB	Left Turn	1	0	0.0%	0.0	0.0	0.0
	Through	1	0	0.0%	0.0	0.0	0.0
	Right Turn						
	Subtotal	2	0	0.0%	0.0	0.0	0.0
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	6	6	96.7%	49.8	34.0	5.0
	Through						
	Right Turn	7	6	88.6%	25.6	14.3	3.0
	Subtotal	13	12	92.3%	42.7	19.3	8.0
Total		23	19	84.3%	24.7	12.8	8.4

## Intersection 3 Shields St/W Plum St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	3	300.0%	58.3	122.9	1.0
	Through	7	6	82.9%	6.4	8.6	0.7
	Right Turn	3	1	26.7%	0.0	0.0	0.0
	Subtotal	11	10	87.3%	56.4	119.7	1.7
SB	Left Turn						
	Through	5	4	76.0%	3.7	5.1	0.3
	Right Turn	2	2	105.0%	1.3	1.6	0.0
	Subtotal	7	6	84.3%	3.9	4.1	0.4
EB	Left Turn	1	1	100.0%	21.0	38.6	0.4
	Through	36	35	96.9%	40.9	11.5	24.5
	Right Turn						
	Subtotal	37	36	97.0%	42.1	10.6	24.9
WB	Left Turn	2	2	115.0%	30.1	40.0	1.0
	Through	119	116	97.1%	42.3	8.4	83.9
	Right Turn	1	0	0.0%	0.0	0.0	0.0
	Subtotal	122	118	96.6%	43.0	8.7	84.9
Total		177	169	95.6%	40.97	6.5	111.84

## Intersection 4 Shields St/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	2	0	0.0%	0.0	0.0	0
	Through	9	6	64.4%	6.4	8.6	1.0
	Right Turn	5	4	76.0%	0.0	0.0	0.0
	Subtotal	16	10	60.0%	3.0	3.4	1.0
SB	Left Turn	1	0	0.0%	0.0	0.0	0.0
	Through	3	2	63.3%	2.1	4.5	0.1
	Right Turn	3	3	86.7%	0.7	1.5	0.0
	Subtotal	7	5	64.3%	1.6	2.4	0.1
EB	Left Turn	1	1	100.0%	15.4	29.2	0.3
	Through	12	14	117.5%	61.5	21.3	12.3
	Right Turn	1	1	70.0%	4.8	15.1	0.1
	Subtotal	14	16	112.9%	61.0	19.3	12.6
WB	Left Turn	3	2	76.7%	13.4	25.6	0.7
	Through	102	102	100.0%	42.3	5.1	71.9
	Right Turn	1	1	80.0%	0.2	0.5	0.0
	Subtotal	106	105	99.2%	42.0	4.3	72.5
Total		143	135	94.4%	40.0	7.0	86.3

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle PM Peak  
MAX Alt

## Intersection 5 Shields St/Lake St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	9	6	64.4%	2.7	4.6	0.4
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	7	5	70.0%	2.6	4.6	0.3
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	8	7	86.3%	38.0	18.1	5.1
	Through						
	Right Turn						
	Subtotal						
Total		31	24	75.8%	17.5	8.2	7.0

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	0	0.0%	0.0	0.0	0
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	15	12	76.7%	8.9	8.5	2.2
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	9	7	82.2%	74.1	41.0	11.1
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		53	43	81.7%	28.5	11.3	23.5

## Intersection 8 City Park Ave/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	3	3	103.3%	33.3	26.7	2
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	5	6	128.0%	34.7	32.8	2.9
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	1	1	90.0%	17.9	37.8	0.3
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	10	11	113.0%	88.7	34.9	14.8
	Through						
	Right Turn						
	Subtotal						
Total		174	177	101.6%	35.5	9.2	102.6

# Bicyclists

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Bicycle PM Peak  
MAX Alt

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	2	2	80.0%	4.6	10.0	0.2
	Through	2	2	95.0%	2.6	5.4	0.1
	Right Turn	2	2	95.0%	2.6	5.4	0.1
	Subtotal	4	4	87.5%	6.2	9.1	0.2
SB	Left Turn	3	4	136.7%	21.7	15.8	1.1
	Through	12	12	96.7%	21.6	9.6	4.3
	Right Turn	11	10	92.7%	12.3	14.1	2.3
	Subtotal	26	26	99.6%	21.4	10.9	7.7
EB	Left Turn	1	1	70.0%	3.2	10.1	0.1
	Through	38	39	102.6%	9.7	7.8	6.2
	Right Turn	1	1	70.0%	3.2	10.1	0.1
	Subtotal	39	40	101.8%	10.1	7.9	6.2
WB	Left Turn	1	1	70.0%	3.2	10.1	0.1
	Through	69	71	102.2%	15.7	5.2	18.0
	Right Turn	4	4	90.0%	11.2	14.7	0.7
	Subtotal	73	74	101.5%	15.9	5.3	18.8
Total		142	143	100.8%	15.3	3.1	32.9

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	1	1	50.0%	1.7	5.4	0
	Through	2	1	60.0%	14.2	25.4	0.5
	Right Turn	2	2	80.0%	24.7	39.2	0.8
	Subtotal	5	3	66.0%	33.6	35.8	1.3
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	47	47	99.4%	35.3	7.2	27.6
	Right Turn						
	Subtotal	47	47	99.4%	35.3	7.2	27.6
WB	Left Turn						
	Through	47	47	99.4%	40.4	14.0	31.7
	Right Turn	1	1	110.0%	17.6	29.0	0.3
	Subtotal	48	48	99.6%	41.3	13.9	32.0
Total		100	98	97.8%	38.5	8.0	60.9

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through	44	42	94.5%	0.8	0.3	0.6
	Right Turn	4	5	122.5%	0.7	1.3	0.0
	Subtotal	48	47	96.9%	0.8	0.3	0.7
SB	Left Turn						
	Through	29	25	87.6%	1.0	0.7	0.5
	Right Turn						
	Subtotal	29	25	87.6%	1.0	0.7	0.5
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	9	8	91.1%	7.6	15.7	1.1
	Through						
	Right Turn	3	3	100.0%	1.1	1.8	0.1
	Subtotal	12	11	93.3%	7.4	15.6	1.2
Total		89	83	93.4%	2.0	2.6	2.3

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk PM Peak  
MAX Alt

## Intersection 2

### Shields St/W Laurel St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side						
	East Side	11	10	89.1%	51.9	11.8	
	Subtotal	11	10	89.1%	51.9	11.8	
SB	East Side	1	1	120.0%	13.7	29.5	
	West Side						
	Subtotal	1	1	120.0%	13.7	29.5	
EB	North Side	13	14	106.9%	58.0	23.0	
	South Side						
	Subtotal	13	14	106.9%	58.0	23.0	
WB	South Side						
	North Side	39	38	96.4%	64.5	20.7	
	Subtotal	39	38	96.4%	64.5	20.7	
Total		64	63	97.7%	58.0	9.5	60.5

## Intersection 3

### Shields St/W Plum St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	70.0%	7.3	18.7	
	East Side	14	13	95.0%	60.6	30.9	
	Subtotal	15	14	93.3%	62.3	27.7	
SB	East Side	1	1	100.0%	9.0	28.5	
	West Side	9	10	105.6%	65.4	32.4	
	Subtotal	10	11	105.0%	65.7	32.5	
EB	North Side	24	25	103.8%	49.7	14.8	
	South Side	15	14	94.0%	45.3	19.9	
	Subtotal	39	39	100.0%	49.5	11.4	
WB	South Side	31	31	99.0%	52.3	19.2	
	North Side	62	58	93.9%	55.5	12.2	
	Subtotal	93	89	95.6%	55.3	8.0	
Total		157	152	97.1%	55.5	6.9	141.1

## Intersection 4

### Shields St/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	5	5	104.0%	56.4	34.7	
	East Side	3	3	110.0%	29.7	41.8	
	Subtotal	8	9	106.3%	67.1	30.9	
SB	East Side	4	4	90.0%	54.1	52.9	
	West Side	4	4	107.5%	42.7	35.8	
	Subtotal	8	8	98.8%	79.2	28.2	
EB	North Side	20	19	97.0%	60.2	9.4	
	South Side	14	13	93.6%	62.3	20.0	
	Subtotal	34	33	95.6%	60.1	10.3	
WB	South Side	68	68	100.3%	50.6	9.2	
	North Side	44	42	95.9%	55.5	9.0	
	Subtotal	112	110	98.6%	52.9	4.4	
Total		162	159	98.3%	56.1	3.0	148.9

## Intersection 5

### Shields St/Lake St

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk PM Peak  
MAX Alt

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side						
	East Side	6	5	90.0%	27.4	31.3	
	Subtotal	6	5	90.0%	27.4	31.3	
SB	East Side	9	10	110.0%	47.9	26.1	
	West Side						
	Subtotal	9	10	110.0%	47.9	26.1	
EB	North Side	5	4	80.0%	33.0	45.5	
	South Side						
	Subtotal	5	4	80.0%	33.0	45.5	
WB	South Side						
	North Side	5	5	106.0%	39.4	30.3	
	Subtotal	5	5	106.0%	39.4	30.3	
Total		25	25	98.4%	42.4	14.9	17.4

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	8	8	103.8%	59.8	32.4	
	East Side	8	9	106.3%	96.2	53.0	
	Subtotal	16	17	105.0%	82.9	30.8	
SB	East Side	21	22	103.8%	55.3	17.1	
	West Side	10	10	102.0%	54.2	28.2	
	Subtotal	31	32	103.2%	56.3	10.8	
EB	North Side	3	3	96.7%	47.3	44.4	
	South Side	6	7	111.7%	45.6	30.9	
	Subtotal	9	10	106.7%	54.1	25.1	
WB	South Side	7	6	84.3%	38.6	41.2	
	North Side	8	8	97.5%	62.7	31.1	
	Subtotal	15	14	91.3%	68.5	23.0	
Total		71	72	101.5%	64.4	10.4	77.4

## Intersection 7 Ped Crossing/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	6	6	91.7%	0.0	0.1	
	East Side	2	2	100.0%	0.0	0.0	
	Subtotal	8	8	93.8%	0.0	0.1	
SB	East Side	1	2	160.0%	4.7	8.2	
	West Side	6	5	88.3%	0.1	0.1	
	Subtotal	7	7	98.6%	2.6	4.3	
EB	North Side						
	South Side						
	Subtotal						
WB	South Side						
	North Side						
	Subtotal						
Total		15	14	96.0%	1.3	2.2	0.3

## Intersection 8 City Park Ave/W Elizabeth St

# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk PM Peak  
MAX AIT

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	32	33	103.4%	56.4	9.6	
	East Side	19	21	111.6%	65.2	18.2	
	Subtotal	51	54	106.5%	61.4	12.2	
SB	East Side	42	43	102.4%	58.3	9.4	
	West Side	19	15	80.5%	61.0	26.5	
	Subtotal	61	58	95.6%	57.8	9.6	
EB	North Side	35	37	105.1%	57.7	9.6	
	South Side	37	38	103.0%	60.9	6.1	
	Subtotal	72	75	104.0%	59.5	5.9	
WB	South Side	32	35	108.8%	57.8	11.9	
	North Side	35	37	105.1%	57.7	9.6	
	Subtotal	55	59	107.8%	58.2	8.8	
Total		239	247	103.3%	58.8	4.2	241.8

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	100.0%	8.6	14.1	
	East Side	2	3	140.0%	24.2	24.8	
	Subtotal	3	4	126.7%	19.6	19.5	
SB	East Side	7	7	97.1%	33.8	18.2	
	West Side	1	1	50.0%	0.0	0.0	
	Subtotal	8	7	91.3%	33.8	18.2	
EB	North Side	6	5	80.0%	5.6	7.5	
	South Side	8	9	108.8%	19.0	12.7	
	Subtotal	14	14	96.4%	18.2	11.4	
WB	South Side	6	6	93.3%	20.3	19.5	
	North Side	9	9	102.2%	14.9	10.9	
	Subtotal	15	15	98.7%	20.4	10.0	
Total		40	39	98.5%	22.6	6.0	14.9

## Intersection 10 Ped Signal/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	1	1	90.0%	13.7	21.3	
	East Side						
	Subtotal	1	1	90.0%	13.7	21.3	
SB	East Side	3	3	90.0%	18.0	24.3	
	West Side						
	Subtotal	3	3	90.0%	18.0	24.3	
EB	North Side						
	South Side						
	Subtotal						
WB	South Side						
	North Side						
	Subtotal						
Total		4	4	90.0%	23.4	17.7	1.4

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)	Percent	Total Delay (sec/person)	Total Person Delay (min)
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# Pedestrians

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Crosswalk PM Peak  
MAX Alt

Direction	Movement	Volume (pph)	Average	Percent	Average	Std. Dev.	Delay (min)
NB	West Side	7	7	95.7%	19.4	22.0	
	East Side	4	4	95.0%	23.7	30.4	
	Subtotal	11	11	95.5%	30.6	25.0	
SB	East Side	3	3	106.7%	22.6	32.1	
	West Side	9	10	105.6%	45.1	24.8	
	Subtotal	12	13	105.8%	46.9	24.9	
EB	North Side	5	4	82.0%	29.1	34.3	
	South Side	8	9	112.5%	35.1	23.7	
	Subtotal	13	13	100.8%	48.0	16.1	
WB	South Side	7	7	94.3%	32.5	23.2	
	North Side	7	8	117.1%	40.0	26.0	
	Subtotal	14	15	105.7%	39.1	13.6	
Total		50	51	102.2%	40.5	9.3	34.5

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand Volume (pph)	Served Volume (pph)		Total Delay (sec/person)		Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	
NB	West Side	3	3	86.7%	1.3	4.1	
	East Side	2	2	100.0%	0.0	0.0	
	Subtotal	5	5	92.0%	1.3	4.1	
SB	East Side	2	2	90.0%	0.0	0.0	
	West Side	1	1	120.0%	0.0	0.0	
	Subtotal	3	3	100.0%	0.0	0.0	
EB	North Side	2	3	125.0%	0.0	0.0	
	South Side	1	1	60.0%	0.0	0.0	
	Subtotal	3	3	103.3%	0.0	0.0	
WB	South Side						
	North Side	1	1	130.0%	0.0	0.0	
	Subtotal	1	1	130.0%	0.0	0.0	
Total		12	12	100.0%	0.5	1.6	0.1

# Transit

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Transit PM Peak  
MAX Alt

## Intersection 2 Shields St/W Laurel St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn	2	19	2	100.0%	0.0	0.0	0.0
	Subtotal	2	19	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	2	73	2	100.0%	101.3	42.1	30.8
	Through							
	Right Turn							
	Subtotal	2	73	2	100.0%	101.3	42.1	30.8
Total		4	92	4	100.0%	67.5	28.1	30.8

## Intersection 3 Shields St/W Plum St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	18	2	100.0%	1.6	1.6	0.1
	Right Turn	5	71	4	84.0%	0.0	0.0	0.0
	Subtotal	7	89	6	88.6%	1.6	1.6	0.1
SB	Left Turn							
	Through	2	73	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	73	2	100.0%	0.0	0.0	0.0
EB	Left Turn							
	Through	6	211	6	100.0%	89.0	15.8	78.2
	Right Turn							
	Subtotal	6	211	6	100.0%	89.0	15.8	78.2
WB	Left Turn	12	795	12	99.2%	72.9	9.0	241.6
	Through							
	Right Turn							
	Subtotal	12	795	12	99.2%	72.9	9.0	241.6
Total		27	1,168	26	96.7%	62.8	5.7	320.0

## Intersection 4 Shields St/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	18	2	100.0%	64.4	11.8	4.8
	Right Turn							
	Subtotal	2	18	2	100.0%	64.4	11.8	4.8
SB	Left Turn							
	Through	2	73	2	100.0%	0.0	0.0	0.0
	Right Turn	12	455	12	99.2%	17.2	13.7	32.6
	Subtotal	14	528	14	99.3%	17.2	13.7	32.6
EB	Left Turn	5	71	4	84.0%	95.5	22.7	28.3
	Through							
	Right Turn							
	Subtotal	5	71	4	84.0%	95.5	22.7	28.3
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		21	617	20	95.7%	44.2	9.0	65.7

# Transit

Vissim Post-Processor  
 Average Results from 10 Runs  
 Volume and Delay by Movement

Transit  
 PM Peak  
 MAX Alt

## Intersection 5 Shields St/Lake St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	124	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	124	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through	2	75	2	100.0%	18.4	14.0	5.8
	Right Turn							
	Subtotal	2	75	2	100.0%	18.4	14.0	5.8
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		4	199	4	100.0%	12.3	9.4	5.8

## Intersection 6 Shields St/Prospect

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	2	26	2	100.0%	0.0	0.0	0.0
	Right Turn							
	Subtotal	2	26	2	100.0%	0.0	0.0	0.0
SB	Left Turn							
	Through	2	75	2	95.0%	17.1	32.6	5.4
	Right Turn							
	Subtotal	2	75	2	95.0%	17.1	32.6	5.4
EB	Left Turn	2	99	2	100.0%	57.5	6.2	23.7
	Through							
	Right Turn							
	Subtotal		99					23.7
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		4	200	4	97.5%	11.4	21.7	29.1

## Intersection 8 City Park Ave/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through	5	71	5	100.0%	38.8	20.9	11.5
	Right Turn							
	Subtotal	5	71	5	100.0%	38.8	20.9	11.5
WB	Left Turn							
	Through	12	455	12	99.2%	36.4	12.8	69.1
	Right Turn							
	Subtotal	12	455	12	99.2%	36.4	12.8	69.1
Total		17	526	17	99.4%	36.5	10.0	80.6

# Transit

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

Transit PM Peak  
MAX Alt

## Intersection 9 Constitution Ave/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through	5	74	5	100.0%	45.1	10.1	13.9
	Right Turn							
	Subtotal	5	74	5	100.0%	45.1	10.1	13.9
WB	Left Turn							
	Through	6	199	6	100.0%	16.6	4.8	13.7
	Right Turn	6	316	6	100.0%	19.3	10.2	25.4
	Subtotal	12	515	12	100.0%	18.4	6.6	39.1
Total		17	589	17	100.0%	27.7	4.5	53.0

## Intersection 11 Taft Hill Rd/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through	1	14	1	100.0%	48.6	18.4	2.8
	Right Turn							
	Subtotal	1	14	1	100.0%	0.0	0.0	2.8
SB	Left Turn							
	Through	1	13	1	100.0%	89.3	8.3	4.8
	Right Turn							
	Subtotal	1	13	1	100.0%	0.0	0.0	4.8
EB	Left Turn							
	Through	5	71	5	100.0%	84.2	46.5	24.9
	Right Turn							
	Subtotal	5	71	5	100.0%	84.2	46.5	24.9
WB	Left Turn							
	Through	6	261	6	100.0%	59.1	26.5	64.2
	Right Turn							
	Subtotal	6	261	6	100.0%	59.1	26.5	64.2
Total		13	359	11	84.6%	56.9	22.9	96.8

## Intersection 12 Overland Trail/W Elizabeth St

Direction	Movement	Demand		Served Volume (vph)		Total Delay (sec/veh)		Total Person Delay (min)
		Volume (vph)	Riders (pp4h)	Average	Percent	Average	Std. Dev.	
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through	6	6	6	100.0%	23.2	18.0	0.6
	Right Turn							
	Subtotal	6	6	6	100.0%	23.2	18.0	0.6
WB	Left Turn							
	Through	6	7	6	98.3%	7.2	4.3	0.2
	Right Turn							
	Subtotal	6	7	6	98.3%	7.2	4.3	0.2
Total		12	13	12	99.2%	15.3	8.7	0.8

**Intersection 2**                      **Shields St/W Laurel St**                      **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn							
	Through	850	829	97.5%	8.0	2.8	A	122
	Right Turn	490	471	96.1%	10.5	2.6	B	90
	Subtotal	1,340	1,300	97.0%	8.9	2.7	A	212
SB	Left Turn	155	156	100.9%	34.7	10.8	C	100
	Through	790	783	99.1%	12.1	1.1	B	174
	Right Turn							
	Subtotal	945	939	99.4%	15.8	2.2	B	274
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	155	146	94.3%	45.1	4.3	D	121
	Through							
	Right Turn	75	70	92.7%	11.4	3.5	B	14
	Subtotal	230	216	93.8%	34.2	4.0	C	135
<b>Total</b>		<b>2,515</b>	<b>2,455</b>	<b>97.6%</b>	<b>13.5</b>	<b>1.6</b>	<b>B</b>	<b>621</b>

**Intersection 3**                      **Shields St/W Plum St**                      **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	20	15	76.5%	11.4	6.8	B	3
	Through	1,260	1,227	97.4%	3.6	1.6	A	81
	Right Turn	45	46	102.0%	3.8	1.8	A	3
	Subtotal	1,325	1,289	97.2%	3.7	1.6	A	88
SB	Left Turn	20	14	68.0%	26.2	24.9	C	7
	Through	905	898	99.2%	5.5	0.7	A	90
	Right Turn	25	20	80.4%	4.3	2.6	A	2
	Subtotal	950	932	98.1%	5.9	0.9	A	98
EB	Left Turn	65	58	89.8%	63.5	17.1	E	68
	Through	30	37	123.7%	67.4	15.9	E	46
	Right Turn	45	40	88.7%	67.0	19.3	E	49
	Subtotal	140	135	96.7%	64.6	14.6	E	163
WB	Left Turn	25	22	88.0%	50.8	25.7	D	20
	Through	25	28	113.2%	34.3	9.6	C	18
	Right Turn	25	20	79.2%	14.4	8.3	B	5
	Subtotal	75	70	93.5%	34.3	9.2	C	43
<b>Total</b>		<b>2,490</b>	<b>2,426</b>	<b>97.4%</b>	<b>10.1</b>	<b>1.4</b>	<b>B</b>	<b>392</b>

**Intersection 4**                      **Shields St/W Elizabeth St**                      **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	170	162	95.5%	32.4	4.7	C	97
	Through	1,005	970	96.5%	11.1	3.1	B	198
	Right Turn	70	62	88.9%	9.7	3.3	A	11
	Subtotal	1,245	1,195	96.0%	14.0	2.4	B	306
SB	Left Turn	30	26	85.7%	53.5	15.1	D	25
	Through	775	769	99.2%	8.2	2.4	A	115
	Right Turn	170	166	97.4%	3.8	0.6	A	12
	Subtotal	975	960	98.5%	8.9	2.0	A	152
EB	Left Turn	315	317	100.6%	48.3	5.6	D	281
	Through	35	36	103.7%	52.2	11.7	D	35
	Right Turn	360	357	99.3%	53.6	25.3	D	351
	Subtotal	710	711	100.1%	51.3	14.2	D	667
WB	Left Turn	20	16	80.5%	37.2	25.9	D	11
	Through	10	6	63.0%	22.2	30.5	C	3
	Right Turn	10	5	50.0%	7.4	10.9	A	1
	Subtotal	40	27	68.5%	37.3	16.7	D	14
<b>Total</b>		<b>2,970</b>	<b>2,893</b>	<b>97.4%</b>	<b>21.7</b>	<b>2.8</b>	<b>C</b>	<b>1,138</b>

Intersection 5		Shields St/Lake St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn							
	Through	1,395	1,372	98.3%	5.0	1.0	A	125
	Right Turn	185	175	94.6%	5.7	1.5	A	18
	Subtotal	1,580	1,547	97.9%	5.1	1.0	A	143
SB	Left Turn	150	145	96.7%	50.5	12.1	D	134
	Through	910	901	99.0%	7.0	3.3	A	115
	Right Turn							
	Subtotal	1,060	1,046	98.7%	13.3	4.6	B	249
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	75	71	94.1%	47.0	8.2	D	61
	Through							
	Right Turn	45	45	99.1%	5.5	1.4	A	4
	Subtotal	120	115	96.0%	31.9	4.8	C	65
Total		2,760	2,708	98.1%	9.8	2.1	A	458

Intersection 6		Shields St/Prospect			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	70	68	97.0%	35.0	8.4	D	44
	Through	1,120	1,107	98.8%	27.0	4.7	C	549
	Right Turn	165	155	94.1%	21.9	7.4	C	62
	Subtotal	1,355	1,330	98.1%	26.8	4.9	C	655
SB	Left Turn	175	178	101.4%	41.5	6.5	D	135
	Through	745	728	97.8%	7.9	2.2	A	106
	Right Turn	65	63	96.2%	4.7	1.5	A	5
	Subtotal	985	968	98.3%	14.2	2.3	B	247
EB	Left Turn	285	264	92.6%	381.2	56.8	F	1,845
	Through	845	792	93.8%	375.3	55.3	F	5,451
	Right Turn	180	165	91.7%	342.7	56.5	F	1,037
	Subtotal	1,310	1,221	93.2%	372.4	55.3	F	8,332
WB	Left Turn	85	83	97.1%	63.5	17.4	E	96
	Through	275	274	99.5%	3.0	1.4	A	15
	Right Turn	175	174	99.1%	19.1	3.3	B	61
	Subtotal	535	530	99.0%	18.0	4.4	B	172
Total		4,185	4,049	96.8%	135.2	17.3	F	9,405

Intersection 8		City Park Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	30	27	89.3%	20.5	3.9	C	10
	Through	45	40	88.7%	19.4	4.4	B	14
	Right Turn	45	44	98.0%	10.1	4.3	B	8
	Subtotal	120	111	92.3%	15.7	2.5	B	32
SB	Left Turn	45	40	89.8%	22.8	6.1	C	17
	Through	40	39	98.3%	18.7	4.2	B	13
	Right Turn	25	26	102.8%	15.7	5.5	B	7
	Subtotal	110	105	95.8%	19.3	2.5	B	38
EB	Left Turn	70	65	92.1%	7.3	1.9	A	9
	Through	545	532	97.6%	5.9	0.6	A	58
	Right Turn	85	82	96.4%	6.0	1.7	A	9
	Subtotal	700	678	96.9%	6.1	0.6	A	75
WB	Left Turn	40	34	86.0%	16.1	4.0	B	10
	Through	200	180	90.2%	5.9	1.3	A	19
	Right Turn	60	52	86.7%	4.0	1.3	A	4
	Subtotal	300	267	88.9%	6.8	1.2	A	33
Total		1,230	1,161	94.4%	8.3	0.6	A	179

**Intersection 9                      Constitution Ave/W Elizabeth St                      Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	5	3	60.0%	7.2	10.0	A	0
	Through	5	6	114.0%	15.1	9.0	B	2
	Right Turn	25	24	94.0%	5.7	1.3	A	2
	Subtotal	35	32	92.0%	8.2	3.4	A	4
SB	Left Turn	45	42	93.6%	20.6	4.1	C	16
	Through	15	11	72.7%	21.5	8.8	C	4
	Right Turn	40	40	99.0%	7.4	1.0	A	5
	Subtotal	100	93	92.6%	14.7	2.7	B	26
EB	Left Turn	35	28	79.7%	4.3	1.9	A	2
	Through	615	609	99.1%	4.2	1.2	A	47
	Right Turn	10	6	60.0%	4.5	5.6	A	0
	Subtotal	660	643	97.4%	4.3	1.2	A	50
WB	Left Turn	5	2	44.0%	2.7	3.4	A	0
	Through	185	170	91.8%	2.7	0.6	A	9
	Right Turn	20	22	108.0%	6.0	2.2	A	2
	Subtotal	210	194	92.2%	3.2	0.6	A	11
<b>Total</b>		<b>1,005</b>	<b>962</b>	<b>95.7%</b>	<b>5.6</b>	<b>1.1</b>	<b>A</b>	<b>91</b>

**Intersection 11                      Taft Hill Rd/W Elizabeth St                      Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	65	65	99.7%	26.7	10.0	C	32
	Through	910	898	98.7%	30.7	11.4	C	505
	Right Turn	140	137	97.6%	31.7	10.3	C	79
	Subtotal	1,115	1,099	98.6%	30.6	11.0	C	616
SB	Left Turn	115	111	96.2%	32.6	4.3	C	66
	Through	675	675	100.0%	17.2	2.2	B	213
	Right Turn	60	53	88.0%	17.1	4.2	B	17
	Subtotal	850	838	98.6%	19.2	2.3	B	296
EB	Left Turn	150	151	100.5%	52.2	18.1	D	144
	Through	295	291	98.8%	59.8	15.8	E	320
	Right Turn	190	192	100.9%	37.1	16.3	D	130
	Subtotal	635	634	99.8%	51.2	16.5	D	594
WB	Left Turn	125	111	88.4%	43.3	15.0	D	88
	Through	135	130	96.1%	30.0	4.0	C	71
	Right Turn	40	37	92.8%	7.0	2.1	A	5
	Subtotal	300	277	92.5%	32.1	6.8	C	164
<b>Total</b>		<b>2,900</b>	<b>2,849</b>	<b>98.2%</b>	<b>32.5</b>	<b>6.7</b>	<b>C</b>	<b>1,670</b>

**Intersection 12                      Overland Trail/W Elizabeth St                      Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	5	5	98.0%	3.4	2.3	A	0
	Through	560	560	100.1%	0.6	0.1	A	6
	Right Turn	85	88	103.5%	0.9	0.1	A	2
	Subtotal	650	653	100.5%	0.7	0.1	A	8
SB	Left Turn	45	41	90.2%	6.3	2.3	A	5
	Through	335	338	100.8%	0.5	0.2	A	3
	Right Turn	15	10	63.3%	0.5	0.2	A	0
	Subtotal	395	388	98.2%	1.1	0.3	A	8
EB	Left Turn	15	13	89.3%	20.4	7.4	C	5
	Through	5	1	18.0%	5.7	13.2	A	0
	Right Turn	5	1	20.0%	0.5	1.6	A	0
	Subtotal	25	15	61.2%	20.0	7.1	C	5
WB	Left Turn	65	62	95.1%	25.0	16.0	D	28
	Through	5	5	100.0%	15.1	9.2	C	1
	Right Turn	80	81	101.1%	19.7	12.7	C	29
	Subtotal	150	148	98.5%	22.2	13.7	C	59
<b>Total</b>		<b>1,220</b>	<b>1,204</b>	<b>98.7%</b>	<b>3.3</b>	<b>1.3</b>	<b>A</b>	<b>80</b>

Intersection 2		Shields St/W Laurel St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	1,040	929	89.3%	22.7	11.7	C	387
	Through	520	461	88.6%	25.0	8.7	C	211
	Right Turn							
	Subtotal	1,560	1,390	89.1%	23.5	10.6	C	598
SB	Left Turn	120	110	92.0%	134.9	43.4	F	273
	Through	1,175	1,121	95.4%	78.3	27.3	E	1608
	Right Turn							
	Subtotal	1,295	1,231	95.1%	83.1	28.5	F	1881
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	605	489	80.8%	445.1	179.8	F	3987
	Through							
	Right Turn	190	160	84.1%	267.8	144.2	F	785
	Subtotal	795	648	81.6%	403.5	178.5	F	4771
Total		3,650	3,269	89.6%	97.4	21.3	F	7250

Intersection 3		Shields St/W Plum St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	85	73	85.6%	110.5	62.7	F	147
	Through	1,460	1,314	90.0%	17.7	14.6	B	427
	Right Turn	70	59	83.9%	14.8	13.0	B	16
	Subtotal	1,615	1,445	89.5%	22.8	15.3	C	590
SB	Left Turn	25	19	77.2%	102.2	27.6	F	36
	Through	1,685	1,506	89.4%	41.6	6.5	D	1149
	Right Turn	75	65	86.9%	41.5	8.6	D	50
	Subtotal	1,785	1,591	89.1%	42.4	6.6	D	1234
EB	Left Turn	75	65	86.9%	274.0	134.3	F	328
	Through	30	29	97.7%	274.6	127.3	F	147
	Right Turn	75	66	88.1%	282.5	133.3	F	342
	Subtotal	180	161	89.2%	278.2	131.9	F	817
WB	Left Turn	70	60	85.3%	97.0	44.9	F	106
	Through	30	34	111.7%	95.2	52.2	F	58
	Right Turn	30	22	73.3%	49.7	34.2	D	20
	Subtotal	130	115	88.6%	87.2	42.6	F	185
Total		3,710	3,312	89.3%	46.8	8.6	D	2827

Intersection 4		Shields St/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	320	273	85.3%	291.5	60.9	F	1459
	Through	1,215	1,095	90.1%	181.0	33.2	F	3633
	Right Turn	70	62	88.6%	154.5	30.0	F	176
	Subtotal	1,605	1,430	89.1%	199.7	38.3	F	5268
SB	Left Turn	15	12	82.0%	82.1	45.1	F	19
	Through	1,295	1,141	88.1%	50.3	8.8	D	1052
	Right Turn	505	462	91.4%	23.8	3.6	C	201
	Subtotal	1,815	1,615	89.0%	43.2	6.3	D	1271
EB	Left Turn	380	353	92.9%	70.7	18.5	E	457
	Through	55	55	99.3%	73.2	20.1	E	73
	Right Turn	445	403	90.5%	49.2	13.8	D	363
	Subtotal	880	810	92.1%	60.3	11.7	E	894
WB	Left Turn	75	71	95.1%	53.2	8.7	D	70
	Through	45	45	99.6%	46.6	9.7	D	38
	Right Turn	10	6	58.0%	17.1	12.2	B	2
	Subtotal	130	122	93.8%	49.3	7.3	D	110
Total		4,430	3,977	89.8%	102.5	10.6	F	7543



Intersection 5		Shields St/Lake St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn							
	Through	1,535	1,452	94.6%	29.5	17.0	C	786
	Right Turn	65	58	88.6%	23.8	12.6	C	25
	Subtotal	1,600	1,509	94.3%	29.3	16.8	C	811
SB	Left Turn	115	93	80.9%	199.8	45.1	F	341
	Through	1,650	1,397	84.7%	128.5	31.6	F	3292
	Right Turn							
	Subtotal	1,765	1,490	84.4%	133.6	31.2	F	3633
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	145	141	97.3%	69.6	13.4	E	180
	Through							
	Right Turn	190	183	96.2%	54.7	31.0	D	183
	Subtotal	335	324	96.7%	61.8	21.6	E	363
Total		3,700	3,323	89.8%	79.6	15.9	E	4807

Intersection 6		Shields St/Prospect			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	195	182	93.3%	144.0	42.4	F	480
	Through	1,100	1,056	96.0%	124.1	53.3	F	2403
	Right Turn	170	155	91.1%	106.4	54.6	F	302
	Subtotal	1,465	1,393	95.1%	125.3	51.3	F	3185
SB	Left Turn	265	242	91.4%	83.8	20.7	F	372
	Through	1,310	1,102	84.1%	39.5	4.7	D	798
	Right Turn	220	181	82.1%	24.5	3.3	C	81
	Subtotal	1,795	1,525	85.0%	45.2	5.9	D	1251
EB	Left Turn	195	183	93.9%	74.2	15.1	E	249
	Through	480	478	99.6%	41.9	3.9	D	368
	Right Turn	195	195	100.1%	22.4	4.4	C	80
	Subtotal	870	857	98.4%	43.8	4.3	D	697
WB	Left Turn	240	228	94.8%	110.6	31.7	F	461
	Through	775	751	96.9%	96.7	38.3	F	1331
	Right Turn	310	289	93.2%	110.5	70.8	F	585
	Subtotal	1,325	1,267	95.6%	102.3	42.2	F	2377
Total		5,455	5,042	92.4%	80.6	22.4	F	7510

Intersection 8		City Park Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	180	167	92.7%	74.2	39.6	E	227
	Through	125	114	91.0%	57.6	38.9	E	120
	Right Turn	100	96	96.2%	51.8	35.1	D	91
	Subtotal	405	377	93.0%	63.2	38.6	E	438
SB	Left Turn	85	79	93.3%	23.8	8.6	C	35
	Through	115	109	94.9%	18.4	4.9	B	37
	Right Turn	60	61	101.5%	18.0	4.9	B	20
	Subtotal	260	249	95.9%	20.0	4.9	C	91
EB	Left Turn	70	64	91.9%	20.7	4.7	C	24
	Through	575	563	97.9%	8.5	0.8	A	88
	Right Turn	110	106	96.3%	9.2	1.7	A	18
	Subtotal	755	733	97.1%	9.6	0.6	A	130
WB	Left Turn	105	97	92.8%	38.3	13.5	D	68
	Through	555	523	94.2%	10.0	0.9	B	96
	Right Turn	90	74	82.4%	10.5	2.0	B	14
	Subtotal	750	695	92.6%	14.4	3.1	B	179
Total		2,170	2,053	94.6%	23.3	7.7	C	838

Intersection 9		Constitution Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	5	2	40.0%	5.1	11.8	A	0
	Through	30	25	83.0%	21.3	7.6	C	10
	Right Turn	40	36	90.0%	7.6	2.2	A	5
	Subtotal	75	63	83.9%	13.2	3.8	B	15
SB	Left Turn	45	42	92.4%	18.4	4.0	B	14
	Through	25	25	101.6%	23.4	5.5	C	11
	Right Turn	85	85	99.5%	14.9	7.4	B	23
	Subtotal	155	152	97.8%	17.1	4.1	B	48
EB	Left Turn	55	51	92.7%	36.1	23.7	D	34
	Through	605	582	96.2%	7.0	1.5	A	75
	Right Turn	10	6	58.0%	8.9	9.2	A	1
	Subtotal	670	639	95.4%	9.4	3.0	A	110
WB	Left Turn	45	43	94.9%	8.9	3.1	A	7
	Through	705	661	93.7%	10.4	5.9	B	125
	Right Turn	55	57	102.7%	12.1	10.0	B	12
	Subtotal	805	760	94.4%	10.4	5.7	B	145
Total		1,705	1,613	94.6%	10.8	4.0	B	317

Intersection 11		Taft Hill Rd/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	155	150	96.9%	42.8	16.0	D	118
	Through	655	656	100.1%	27.1	5.4	C	326
	Right Turn	150	145	96.4%	24.1	5.4	C	64
	Subtotal	960	951	99.0%	29.3	7.0	C	507
SB	Left Turn	120	116	96.4%	75.6	16.1	E	160
	Through	870	844	97.0%	59.5	11.3	E	920
	Right Turn	95	85	89.1%	56.8	12.2	E	88
	Subtotal	1,085	1,044	96.3%	61.1	11.1	E	1169
EB	Left Turn	185	177	95.6%	143.1	90.2	F	464
	Through	345	332	96.2%	101.3	67.3	F	616
	Right Turn	140	131	93.4%	80.7	66.2	F	194
	Subtotal	670	639	95.4%	108.8	73.4	F	1274
WB	Left Turn	205	191	93.0%	66.9	22.2	E	234
	Through	365	340	93.1%	51.3	25.7	D	320
	Right Turn	90	80	88.3%	20.3	15.5	C	30
	Subtotal	660	610	92.4%	51.6	22.5	D	583
Total		3,375	3,244	96.1%	57.7	12.5	E	3533

Intersection 12		Overland Trail/W Elizabeth St			Side-street Stop			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	5	3	56.0%	4.1	3.9	A	0
	Through	365	362	99.3%	0.5	0.2	A	4
	Right Turn	95	98	103.5%	0.9	0.2	A	2
	Subtotal	465	464	99.7%	0.7	0.2	A	5
SB	Left Turn	85	86	101.4%	5.2	1.6	A	8
	Through	610	603	98.9%	0.6	0.1	A	7
	Right Turn	10	8	78.0%	0.7	0.5	A	0
	Subtotal	705	697	98.9%	1.2	0.2	A	15
EB	Left Turn	5	3	54.0%	9.1	12.3	A	0
	Through	5	4	76.0%	3.7	2.6	A	0
	Right Turn	10	7	65.0%	8.6	6.8	A	1
	Subtotal	10	7	65.0%	8.6	6.8	A	1
WB	Left Turn	80	74	92.4%	29.3	6.4	D	40
	Through	10	6	56.0%	28.1	13.6	D	3
	Right Turn	80	72	90.0%	14.5	1.7	B	19
	Subtotal	170	152	89.1%	22.8	3.8	C	62
Total		1,350	1,319	97.7%	3.6	0.7	A	83

Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
2040 TSM Alt  
AM Peak Hour

Intersection 2 Shields St/W Laurel St Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn							
	Through	850	828	97.4%	5.1	2.0	A	78
	Right Turn	490	469	95.6%	8.0	1.5	A	69
	Subtotal	1,340	1,297	96.8%	6.2	1.5	A	146
SB	Left Turn	155	158	101.7%	30.0	5.4	C	87
	Through	790	789	99.9%	12.9	1.5	B	187
	Right Turn							
	Subtotal	945	947	100.2%	16.1	2.1	B	273
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	155	144	93.1%	47.4	6.0	D	125
	Through							
	Right Turn	75	72	95.3%	11.6	2.2	B	15
	Subtotal	230	216	93.8%	35.9	3.7	D	141
Total		2,515	2,459	97.8%	14.0	1.6	B	560

Intersection 3 Shields St/W Plum St Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	20	15	72.5%	13.1	12.2	B	3
	Through	1,260	1,216	96.5%	4.7	1.8	A	104
	Right Turn	45	46	101.3%	3.8	2.0	A	3
	Subtotal	1,325	1,276	96.3%	4.8	1.8	A	111
SB	Left Turn	20	14	70.0%	38.0	25.1	D	10
	Through	905	901	99.6%	6.9	1.4	A	114
	Right Turn	25	22	88.0%	5.4	2.9	A	2
	Subtotal	950	937	98.6%	7.4	1.4	A	126
EB	Left Turn	65	64	98.8%	57.9	15.1	E	68
	Through	30	38	125.7%	67.0	13.1	E	46
	Right Turn	45	40	88.7%	62.9	15.7	E	46
	Subtotal	140	142	101.3%	61.5	13.1	E	160
WB	Left Turn	25	19	76.0%	45.9	20.3	D	16
	Through	25	33	130.4%	45.7	10.5	D	27
	Right Turn	25	21	85.2%	14.2	5.4	B	6
	Subtotal	75	73	97.2%	36.3	10.1	D	49
Total		2,490	2,428	97.5%	10.4	1.1	B	446

Intersection 4 Shields St/W Elizabeth St Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	170	165	97.1%	36.1	9.8	D	109
	Through	1,005	964	95.9%	12.1	3.1	B	213
	Right Turn	70	65	92.6%	11.6	5.3	B	14
	Subtotal	1,245	1,194	95.9%	15.4	3.5	B	336
SB	Left Turn	30	26	86.3%	42.4	19.8	D	20
	Through	775	774	99.8%	8.9	2.0	A	126
	Right Turn	170	159	93.6%	3.4	0.8	A	10
	Subtotal	975	959	98.3%	9.0	1.5	A	156
EB	Left Turn	315	313	99.2%	49.4	9.9	D	283
	Through	35	33	93.7%	60.3	28.2	E	36
	Right Turn	360	359	99.7%	59.7	33.5	E	393
	Subtotal	710	704	99.2%	55.2	22.1	E	712
WB	Left Turn	20	17	83.5%	41.5	26.0	D	13
	Through	10	5	52.0%	18.8	25.4	B	2
	Right Turn	10	6	55.0%	5.5	9.1	A	1
	Subtotal	40	27	68.5%	38.3	10.1	D	15
Total		2,970	2,884	97.1%	22.9	4.9	C	1,219

Intersection 5		Shields St/Lake St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn							
	Through	1,395	1,378	98.8%	4.2	1.0	A	107
	Right Turn	185	180	97.0%	5.4	1.3	A	18
	Subtotal	1,580	1,557	98.6%	4.4	1.1	A	125
SB	Left Turn	150	142	94.3%	55.9	10.9	E	145
	Through	910	910	100.0%	6.9	1.8	A	116
	Right Turn							
	Subtotal	1,060	1,051	99.2%	14.2	3.9	B	261
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	75	74	98.1%	43.2	9.8	D	58
	Through							
	Right Turn	45	43	95.3%	4.4	0.6	A	3
	Subtotal	120	117	97.1%	29.3	8.8	C	62
Total		2,760	2,725	98.7%	9.0	2.1	A	447

Intersection 6		Shields St/Prospect			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	70	63	90.4%	32.1	10.1	C	37
	Through	1,120	1,116	99.6%	30.4	5.6	C	621
	Right Turn	165	151	91.8%	22.3	6.8	C	62
	Subtotal	1,355	1,330	98.2%	29.7	5.4	C	721
SB	Left Turn	175	178	101.6%	51.3	14.8	D	167
	Through	745	734	98.5%	9.1	1.7	A	122
	Right Turn	65	69	105.4%	2.6	0.6	A	3
	Subtotal	985	980	99.5%	16.3	3.6	B	293
EB	Left Turn	285	263	92.1%	404.1	41.8	F	1,945
	Through	845	789	93.4%	390.4	40.2	F	5,647
	Right Turn	180	165	91.5%	355.0	40.3	F	1,072
	Subtotal	1,310	1,216	92.8%	389.4	39.8	F	8,664
WB	Left Turn	85	83	97.5%	60.9	14.1	E	93
	Through	275	276	100.5%	43.1	3.6	D	218
	Right Turn	175	173	98.9%	18.1	2.3	B	57
	Subtotal	535	532	99.5%	38.1	3.2	D	368
Total		4,185	4,059	97.0%	140.5	9.1	F	10,046

Intersection 8		City Park Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	30	30	100.3%	19.1	2.7	B	11
	Through	45	42	92.9%	19.7	5.5	B	15
	Right Turn	45	42	94.2%	11.5	4.0	B	9
	Subtotal	120	114	95.3%	16.4	3.7	B	35
SB	Left Turn	45	42	93.3%	20.9	3.5	C	16
	Through	40	37	93.3%	20.6	5.4	C	14
	Right Turn	25	26	105.2%	15.2	6.9	B	7
	Subtotal	110	106	96.0%	19.3	3.2	B	38
EB	Left Turn	70	68	97.1%	7.3	3.8	A	9
	Through	545	527	96.6%	5.7	1.5	A	55
	Right Turn	85	82	95.9%	6.2	1.5	A	9
	Subtotal	700	676	96.6%	6.0	1.5	A	74
WB	Left Turn	40	35	86.8%	13.4	4.0	B	9
	Through	200	182	90.9%	5.2	1.0	A	17
	Right Turn	60	50	83.0%	3.3	1.0	A	3
	Subtotal	300	266	88.8%	6.0	1.4	A	29
Total		1,230	1,162	94.5%	8.1	1.2	A	175

**Intersection 9**                      **Constitution Ave/W Elizabeth St**                      **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	5	3	64.0%	5.8	9.2	A	0
	Through	5	5	96.0%	13.4	10.8	B	1
	Right Turn	25	24	95.2%	6.5	2.8	A	3
	Subtotal	35	32	90.9%	9.6	4.1	A	4
SB	Left Turn	45	43	95.6%	23.0	2.6	C	18
	Through	15	10	67.3%	19.6	7.8	B	4
	Right Turn	40	46	113.8%	7.5	1.3	A	6
	Subtotal	100	99	98.6%	15.8	1.7	B	28
EB	Left Turn	35	39	111.1%	11.1	3.3	B	8
	Through	615	607	98.8%	5.2	1.1	A	58
	Right Turn	10	6	59.0%	3.1	3.7	A	0
	Subtotal	660	652	98.8%	5.5	1.1	A	66
WB	Left Turn	5	3	60.0%	5.7	8.4	A	0
	Through	185	174	93.8%	6.6	0.9	A	21
	Right Turn	20	23	113.0%	6.5	2.6	A	3
	Subtotal	210	199	94.8%	6.6	1.0	A	24
<b>Total</b>		<b>1,005</b>	<b>982</b>	<b>97.7%</b>	<b>7.4</b>	<b>1.0</b>	<b>A</b>	<b>123</b>

**Intersection 11**                      **Taft Hill Rd/W Elizabeth St**                      **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	65	62	94.8%	24.4	6.0	C	28
	Through	910	914	100.5%	27.4	7.8	C	460
	Right Turn	140	133	95.0%	27.2	7.9	C	66
	Subtotal	1,115	1,109	99.5%	27.3	7.5	C	554
SB	Left Turn	115	109	94.8%	33.5	5.1	C	67
	Through	675	674	99.8%	17.8	2.0	B	220
	Right Turn	60	57	95.5%	16.9	5.9	B	18
	Subtotal	850	840	98.8%	19.8	1.9	B	305
EB	Left Turn	150	151	100.7%	45.8	11.3	D	127
	Through	295	295	100.0%	54.2	10.8	D	293
	Right Turn	190	194	102.1%	32.0	8.5	C	114
	Subtotal	635	640	100.8%	45.6	10.1	D	534
WB	Left Turn	125	117	93.5%	45.2	22.2	D	97
	Through	135	136	100.7%	31.5	5.3	C	78
	Right Turn	40	40	99.5%	6.2	2.0	A	5
	Subtotal	300	293	97.5%	34.1	12.0	C	180
<b>Total</b>		<b>2,900</b>	<b>2,882</b>	<b>99.4%</b>	<b>30.2</b>	<b>5.2</b>	<b>C</b>	<b>1,572</b>

**Intersection 12**                      **Overland Trail/W Elizabeth St**                      **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	5	4	86.0%	2.4	2.9	A	0
	Through	560	569	101.6%	0.7	0.1	A	7
	Right Turn	85	85	99.4%	1.0	0.2	A	2
	Subtotal	650	658	101.2%	0.8	0.1	A	9
SB	Left Turn	45	40	89.6%	8.0	2.7	A	6
	Through	335	339	101.2%	0.4	0.1	A	2
	Right Turn	15	11	70.0%	0.3	0.3	A	0
	Subtotal	395	390	98.7%	1.2	0.4	A	8
EB	Left Turn	15	14	94.7%	21.2	11.3	C	6
	Through	5	7	142.0%	29.2	8.5	D	4
	Right Turn	5	1	24.0%	4.4	8.8	A	0
	Subtotal	25	23	90.0%	23.9	7.2	C	9
WB	Left Turn	65	58	89.2%	31.4	13.7	D	33
	Through	5	11	222.0%	61.6	22.5	F	13
	Right Turn	80	78	97.6%	22.5	17.0	C	32
	Subtotal	150	147	98.1%	29.7	14.2	D	78
<b>Total</b>		<b>1,220</b>	<b>1,217</b>	<b>99.8%</b>	<b>4.7</b>	<b>1.4</b>	<b>A</b>	<b>105</b>

Intersection 2		Shields St/W Laurel St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	1,040	908	87.3%	17.0	4.4	B	283
	Through							
	Right Turn	520	452	86.9%	22.7	5.2	C	188
	Subtotal	1,560	1,360	87.2%	18.9	4.6	B	471
SB	Left Turn	120	104	86.9%	170.2	70.3	F	325
	Through	1,175	1,125	95.7%	75.4	25.2	E	1555
	Right Turn							
	Subtotal	1,295	1,229	94.9%	83.8	29.7	F	1880
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	605	511	84.5%	407.3	177.7	F	3818
	Through							
	Right Turn	190	161	84.5%	221.3	120.1	F	651
	Subtotal	795	672	84.5%	364.0	170.5	F	4469
Total		3,650	3,261	89.3%	98.1	15.7	F	6821

Intersection 3		Shields St/W Plum St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	85	72	84.9%	87.9	30.2	F	116
	Through	1,460	1,273	87.2%	12.3	9.9	B	288
	Right Turn	70	55	79.0%	12.6	9.8	B	13
	Subtotal	1,615	1,401	86.7%	16.5	10.5	B	417
SB	Left Turn	25	20	79.2%	87.9	40.6	F	32
	Through	1,685	1,534	91.1%	36.8	5.6	D	1036
	Right Turn	75	67	89.3%	39.7	6.8	D	49
	Subtotal	1,785	1,621	90.8%	37.5	5.7	D	1116
EB	Left Turn	75	68	90.3%	171.1	68.6	F	212
	Through	30	38	125.3%	176.5	58.8	F	122
	Right Turn	75	66	88.0%	170.6	73.5	F	206
	Subtotal	180	171	95.2%	170.6	67.5	F	540
WB	Left Turn	70	57	81.0%	58.4	16.3	E	61
	Through	30	39	131.3%	59.3	13.8	E	43
	Right Turn	30	22	74.3%	23.8	10.5	C	10
	Subtotal	130	118	91.1%	53.9	9.9	D	113
Total		3,710	3,311	89.3%	37.3	7.9	D	2187

Intersection 4		Shields St/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	320	255	79.6%	326.9	44.9	F	1527
	Through	1,215	1,064	87.6%	205.1	23.3	F	4003
	Right Turn	70	60	85.9%	182.7	23.5	F	201
	Subtotal	1,605	1,379	85.9%	225.4	27.8	F	5731
SB	Left Turn	15	12	78.7%	58.5	34.8	E	13
	Through	1,295	1,159	89.5%	42.8	7.5	D	910
	Right Turn	505	471	93.2%	26.5	4.4	C	229
	Subtotal	1,815	1,641	90.4%	38.4	5.6	D	1151
EB	Left Turn	380	332	87.4%	91.4	22.6	F	557
	Through	55	52	94.0%	92.6	20.5	F	88
	Right Turn	445	374	84.0%	107.9	11.5	F	739
	Subtotal	880	758	86.1%	100.5	10.5	F	1383
WB	Left Turn	75	73	96.8%	55.4	9.2	E	74
	Through	45	43	95.8%	49.9	11.7	D	39
	Right Turn	10	6	63.0%	23.8	26.3	C	3
	Subtotal	130	122	93.8%	52.3	7.4	D	116
Total		4,430	3,900	88.0%	115.0	9.5	F	8381

Intersection 5 Shields St/Lake St Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn							
	Through	1,535	1,405	91.5%	38.1	14.9	D	980
	Right Turn	65	59	90.5%	31.5	13.1	C	34
	Subtotal	1,600	1,464	91.5%	37.8	14.8	D	1014
SB	Left Turn	115	87	75.5%	184.5	49.3	F	294
	Through	1,650	1,404	85.1%	110.8	50.3	F	2853
	Right Turn							
	Subtotal	1,765	1,491	84.5%	115.7	49.5	F	3147
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	145	142	98.1%	89.8	41.3	F	234
	Through							
	Right Turn	190	180	94.6%	78.2	53.9	E	258
	Subtotal	335	322	96.1%	84.1	48.0	F	492
Total		3,700	3,277	88.6%	78.8	25.4	E	4653

Intersection 6 Shields St/Prospect Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	195	170	87.3%	232.0	73.9	F	724
	Through	1,100	1,008	91.6%	218.9	74.7	F	4044
	Right Turn	170	143	84.1%	190.7	67.5	F	500
	Subtotal	1,465	1,321	90.2%	217.8	73.3	F	5268
SB	Left Turn	265	239	90.2%	75.3	19.4	E	330
	Through	1,310	1,109	84.6%	33.4	8.7	C	679
	Right Turn	220	187	85.1%	20.2	6.9	C	69
	Subtotal	1,795	1,535	85.5%	38.5	9.3	D	1079
EB	Left Turn	195	187	95.7%	85.3	14.5	F	292
	Through	480	477	99.4%	43.5	5.0	D	381
	Right Turn	195	197	100.8%	23.7	4.1	C	85
	Subtotal	870	861	98.9%	47.6	4.9	D	758
WB	Left Turn	240	228	95.2%	121.5	40.3	F	509
	Through	775	726	93.7%	118.2	48.3	F	1573
	Right Turn	310	287	92.5%	157.3	85.0	F	827
	Subtotal	1,325	1,241	93.7%	127.9	54.3	F	2909
Total		5,455	4,957	90.9%	105.5	24.3	F	10014

Intersection 8 City Park Ave/W Elizabeth St Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	180	171	94.7%	87.8	65.6	F	274
	Through	125	112	89.4%	82.5	95.2	F	169
	Right Turn	100	93	93.1%	78.5	82.9	E	134
	Subtotal	405	375	92.7%	84.2	78.5	F	577
SB	Left Turn	85	80	94.4%	32.4	22.6	C	48
	Through	115	106	91.8%	18.0	4.2	B	35
	Right Turn	60	62	102.7%	18.5	5.3	B	21
	Subtotal	260	247	95.2%	22.5	8.3	C	103
EB	Left Turn	70	66	94.4%	34.6	37.0	C	42
	Through	575	564	98.1%	27.0	42.2	C	279
	Right Turn	110	106	95.9%	20.2	30.9	C	39
	Subtotal	755	736	97.4%	26.6	40.1	C	360
WB	Left Turn	105	89	84.5%	77.4	116.6	E	126
	Through	555	513	92.3%	9.6	1.1	A	90
	Right Turn	90	74	81.7%	9.7	1.9	A	13
	Subtotal	750	675	90.0%	14.3	4.6	B	229
Total		2,170	2,033	93.7%	31.7	25.0	C	1269

Intersection 9		Constitution Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	5	2	46.0%	2.4	5.0	A	0
	Through	30	23	75.3%	24.2	6.7	C	10
	Right Turn	40	35	88.3%	8.0	3.5	A	5
	Subtotal	75	60	80.3%	14.9	5.7	B	15
SB	Left Turn	45	42	93.3%	25.6	2.7	C	20
	Through	25	27	108.0%	25.3	4.8	C	13
	Right Turn	85	85	100.2%	15.8	4.3	B	25
	Subtotal	155	154	99.5%	20.2	2.8	C	57
EB	Left Turn	55	58	105.5%	18.3	7.0	B	19
	Through	605	591	97.7%	6.7	1.1	A	72
	Right Turn	10	7	66.0%	5.5	5.2	A	1
	Subtotal	670	655	97.8%	7.8	1.4	A	92
WB	Left Turn	45	45	99.8%	12.1	4.4	B	10
	Through	705	652	92.5%	11.5	2.9	B	138
	Right Turn	55	55	99.3%	12.6	4.3	B	13
	Subtotal	805	752	93.4%	11.7	2.8	B	161
Total		1,705	1,621	95.1%	11.1	2.1	B	325

Intersection 11		Taft Hill Rd/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	155	151	97.5%	40.1	8.4	D	111
	Through	655	646	98.6%	26.9	3.3	C	318
	Right Turn	150	147	97.9%	25.8	4.2	C	69
	Subtotal	960	944	98.3%	28.8	3.9	C	499
SB	Left Turn	120	118	98.1%	75.5	16.8	E	163
	Through	870	843	96.9%	56.9	11.8	E	880
	Right Turn	95	84	88.2%	54.4	14.9	D	84
	Subtotal	1,085	1,045	96.3%	58.8	12.3	E	1127
EB	Left Turn	185	177	95.5%	106.8	78.4	F	346
	Through	345	342	99.2%	77.7	55.5	E	488
	Right Turn	140	132	94.5%	55.9	51.6	E	136
	Subtotal	670	651	97.2%	81.5	61.5	F	969
WB	Left Turn	205	187	91.1%	79.7	49.9	E	273
	Through	365	335	91.7%	49.1	16.2	D	301
	Right Turn	90	81	89.4%	14.9	9.5	B	22
	Subtotal	660	602	91.2%	53.3	22.7	D	596
Total		3,375	3,242	96.0%	52.7	12.3	D	3190

Intersection 12		Overland Trail/W Elizabeth St			Side-street Stop			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	5	3	54.0%	4.1	4.0	A	0
	Through	365	360	98.5%	0.5	0.1	A	4
	Right Turn	95	96	100.5%	1.0	0.1	A	2
	Subtotal	465	458	98.4%	0.7	0.1	A	6
SB	Left Turn	85	80	93.6%	5.4	1.4	A	8
	Through	610	605	99.1%	0.6	0.2	A	7
	Right Turn	10	8	75.0%	0.6	0.4	A	0
	Subtotal	705	692	98.1%	1.2	0.3	A	15
EB	Left Turn	5	2	46.0%	4.9	8.8	A	0
	Through							
	Right Turn	5	4	76.0%	2.5	2.6	A	0
	Subtotal	10	6	61.0%	6.2	7.2	A	0
WB	Left Turn	80	70	87.1%	32.4	6.1	D	41
	Through	10	6	57.0%	24.2	27.9	C	3
	Right Turn	80	73	90.8%	14.7	2.9	B	20
	Subtotal	170	148	87.1%	23.2	3.9	C	64
Total		1,350	1,304	96.6%	3.6	0.5	A	84



Vissim Post-Processor  
Average Results from 10 Runs  
Volume and Delay by Movement

WCAP W Elizabeth St  
2040 Traffic Calming Alt  
AM Peak Hour

Intersection 2		Shields St/W Laurel St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	850	822	96.7%	6.3	2.7	A	95
	Through	490	464	94.6%	8.3	2.3	A	70
	Right Turn							
	Subtotal	1,340	1,285	95.9%	7.0	2.3	A	165
SB	Left Turn	155	160	103.0%	30.9	5.4	C	90
	Through	790	781	98.8%	13.2	2.2	B	190
	Right Turn							
	Subtotal	945	940	99.5%	16.4	2.5	B	280
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	155	145	93.6%	45.4	5.6	D	121
	Through							
	Right Turn	75	70	92.8%	11.8	3.3	B	15
	Subtotal	230	215	93.3%	34.7	4.1	C	136
Total		2,515	2,440	97.0%	14.4	1.8	B	581

Intersection 3		Shields St/W Plum St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	20	16	81.5%	15.8	7.2	B	5
	Through	1,260	1,204	95.5%	1.6	0.4	A	35
	Right Turn	45	48	106.7%	2.3	0.8	A	2
	Subtotal	1,325	1,268	95.7%	1.8	0.4	A	42
SB	Left Turn	20	13	66.5%	21.0	15.4	C	5
	Through	905	895	98.9%	5.7	1.2	A	94
	Right Turn	25	21	83.2%	3.5	2.8	A	1
	Subtotal	950	929	97.8%	6.0	1.3	A	101
EB	Left Turn	65	65	100.2%	55.4	8.8	E	66
	Through	30	44	145.3%	49.4	9.5	D	39
	Right Turn	45	44	98.7%	50.2	11.8	D	41
	Subtotal	140	153	109.4%	52.6	8.9	D	146
WB	Left Turn	25	20	79.6%	38.4	14.7	D	14
	Through	25	33	133.6%	37.1	10.7	D	23
	Right Turn	25	20	78.4%	13.2	5.6	B	5
	Subtotal	75	73	97.2%	32.0	8.1	C	41
Total		2,490	2,423	97.3%	8.4	1.0	A	330

Intersection 4		Shields St/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	170	163	95.6%	49.2	13.3	D	147
	Through	1,005	964	95.9%	15.3	2.4	B	270
	Right Turn	70	62	88.7%	11.9	3.0	B	14
	Subtotal	1,245	1,188	95.4%	19.8	3.5	B	430
SB	Left Turn	30	26	85.7%	54.9	14.9	D	26
	Through	775	770	99.4%	10.8	1.8	B	153
	Right Turn	170	162	95.5%	5.6	2.0	A	17
	Subtotal	975	958	98.3%	11.2	1.8	B	196
EB	Left Turn	315	298	94.7%	59.3	9.4	E	324
	Through	35	30	84.6%	57.6	13.4	E	31
	Right Turn	360	348	96.5%	50.1	7.5	D	319
	Subtotal	710	675	95.1%	54.6	7.7	D	675
WB	Left Turn	20	18	89.0%	38.7	26.1	D	13
	Through	10	5	49.0%	15.8	25.6	B	1
	Right Turn	10	5	48.0%	17.3	25.4	B	2
	Subtotal	40	28	68.8%	41.4	18.6	D	16
Total		2,970	2,849	95.9%	25.5	2.2	C	1316

Intersection 5		Shields St/Lake St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn							
	Through	1,395	1,373	98.4%	4.3	1.2	A	109
	Right Turn	185	177	95.4%	5.4	1.7	A	18
	Subtotal	1,580	1,550	98.1%	4.5	1.2	A	127
SB	Left Turn	150	139	92.5%	61.9	10.8	E	157
	Through	910	898	98.6%	10.1	2.6	B	166
	Right Turn							
	Subtotal	1,060	1,036	97.8%	17.8	4.5	B	323
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	75	74	98.5%	44.8	9.5	D	61
	Through							
	Right Turn	45	44	96.7%	5.5	2.3	A	4
	Subtotal	120	117	97.8%	29.9	7.1	C	65
Total		2,760	2,703	97.9%	10.5	2.3	B	515

Intersection 6		Shields St/Prospect			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	70	66	94.3%	37.3	7.3	D	45
	Through	1,120	1,108	98.9%	32.3	7.3	C	656
	Right Turn	165	157	95.0%	22.7	6.2	C	65
	Subtotal	1,355	1,330	98.2%	31.6	6.9	C	767
SB	Left Turn	175	174	99.1%	44.7	10.2	D	142
	Through	745	723	97.1%	5.5	0.9	A	74
	Right Turn	65	68	104.3%	1.8	0.5	A	2
	Subtotal	985	964	97.9%	12.6	2.8	B	218
EB	Left Turn	285	266	93.3%	406.2	31.3	F	1980
	Through	845	788	93.3%	391.3	33.2	F	5654
	Right Turn	180	170	94.6%	355.0	38.8	F	1108
	Subtotal	1,310	1,224	93.5%	390.1	31.9	F	8743
WB	Left Turn	85	82	96.6%	52.8	6.0	D	79
	Through	275	279	101.6%	41.5	3.9	D	212
	Right Turn	175	171	97.8%	18.7	3.3	B	59
	Subtotal	535	533	99.6%	36.1	2.8	D	351
Total		4,185	4,052	96.8%	141.4	11.1	F	10078

Intersection 8		City Park Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	30	28	93.0%	34.6	11.9	C	18
	Through	45	39	86.4%	28.6	8.5	C	20
	Right Turn	45	42	94.0%	11.1	5.6	B	9
	Subtotal	120	109	90.9%	22.6	8.3	C	47
SB	Left Turn	45	18	39.6%	37.8	11.6	D	12
	Through	40	0	0.0%	0.0	0.0	A	0
	Right Turn	25	89	356.0%	6.6	1.3	A	11
	Subtotal	110	107	97.1%	12.3	2.9	B	23
EB	Left Turn	70	66	94.3%	47.6	5.3	D	58
	Through	545	531	97.3%	13.9	2.9	B	135
	Right Turn	85	77	90.7%	11.9	4.5	B	17
	Subtotal	700	674	96.2%	16.8	3.0	B	209
WB	Left Turn	40	34	84.5%	39.5	10.9	D	24
	Through	200	183	91.6%	10.9	3.5	B	37
	Right Turn	60	50	82.5%	6.4	3.8	A	6
	Subtotal	300	267	88.8%	13.9	3.7	B	67
Total		1,230	1,156	94.0%	16.3	2.9	B	346

Intersection 9		Constitution Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	5	3	56.0%	10.4	17.5	B	1
	Through	5	6	118.0%	12.1	16.1	B	1
	Right Turn	25	25	100.4%	29.6	11.9	C	14
	Subtotal	35	34	96.6%	29.4	10.0	C	15
SB	Left Turn	45	44	97.1%	26.9	6.8	C	22
	Through	15	10	68.0%	22.6	22.5	C	4
	Right Turn	40	42	105.0%	27.3	6.6	C	21
	Subtotal	100	96	95.9%	27.6	4.8	C	47
EB	Left Turn	35	37	105.7%	61.7	37.2	E	42
	Through	615	602	97.8%	10.3	9.1	B	114
	Right Turn	10	6	63.0%	10.2	17.8	B	1
	Subtotal	660	645	97.7%	13.2	11.9	B	157
WB	Left Turn	5	3	64.0%	17.6	24.1	B	1
	Through	185	153	82.9%	6.9	2.3	A	19
	Right Turn	20	36	179.5%	6.2	2.2	A	4
	Subtotal	210	193	91.7%	7.2	2.2	A	25
Total		1,005	967	96.2%	13.6	8.1	B	243

Intersection 11		Taft Hill Rd/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	65	60	92.9%	70.3	9.9	E	78
	Through	910	866	95.1%	87.4	10.0	F	1386
	Right Turn	140	126	90.2%	91.0	10.6	F	211
	Subtotal	1,115	1,052	94.4%	86.9	9.4	F	1675
SB	Left Turn	115	110	95.9%	39.6	7.7	D	80
	Through	675	676	100.1%	24.0	2.4	C	297
	Right Turn	60	59	97.7%	26.3	6.3	C	28
	Subtotal	850	845	99.4%	26.3	2.5	C	406
EB	Left Turn	150	148	98.7%	220.8	78.9	F	599
	Through	295	293	99.2%	168.7	70.8	F	905
	Right Turn	190	188	99.1%	209.8	68.5	F	724
	Subtotal	635	629	99.1%	193.7	71.8	F	2229
WB	Left Turn	125	102	81.7%	124.4	39.3	F	233
	Through	135	124	92.1%	32.6	11.4	C	74
	Right Turn	40	36	91.0%	34.0	8.2	C	23
	Subtotal	300	263	87.6%	70.3	21.8	E	330
Total		2,900	2,789	96.2%	93.7	14.9	F	4639

Intersection 12		Overland Trail/W Elizabeth St			Roundabout			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	5	4	78.0%	5.1	4.1	A	0
	Through	560	564	100.8%	6.4	1.5	A	66
	Right Turn	85	86	100.7%	6.0	1.9	A	9
	Subtotal	650	654	100.6%	6.3	1.5	A	76
SB	Left Turn	45	38	83.3%	4.3	1.5	A	3
	Through	335	345	102.9%	3.8	0.8	A	24
	Right Turn	15	12	76.7%	3.4	3.1	A	1
	Subtotal	395	394	99.7%	3.8	0.7	A	28
EB	Left Turn	15	14	91.3%	5.3	3.6	A	1
	Through	5	7	144.0%	7.3	4.3	A	1
	Right Turn	5	1	16.0%	2.7	4.3	A	0
	Subtotal	25	22	86.8%	6.4	1.8	A	2
WB	Left Turn	65	56	86.2%	10.7	3.0	B	11
	Through	5	11	216.0%	13.1	4.6	B	3
	Right Turn	80	74	92.1%	12.4	5.2	B	17
	Subtotal	150	141	93.7%	11.6	3.8	B	30
Total		1,220	1,210	99.2%	6.2	1.0	A	136

Intersection 2		Shields St/W Laurel St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	1,040	938	90.1%	23.2	9.1	C	398
	Through		459	88.2%	28.3	9.3	C	238
	Right Turn	520						
	Subtotal	1,560	1,396	89.5%	24.8	9.0	C	636
SB	Left Turn	120	97	80.7%	265.3	79.3	F	471
	Through	1,175	998	84.9%	168.5	16.4	F	3081
	Right Turn							
	Subtotal	1,295	1,094	84.5%	176.6	19.7	F	3552
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	605	561	92.8%	239.5	115.1	F	2465
	Through		173	91.2%	130.3	94.2	F	414
	Right Turn	190						
	Subtotal	795	735	92.4%	212.5	107.1	F	2878
Total		3,650	3,225	88.4%	113.5	23.2	F	7066

Intersection 3		Shields St/W Plum St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	85	72	84.4%	92.6	19.2	F	122
	Through	1,460	1,315	90.0%	12.7	13.0	B	307
	Right Turn	70	54	76.9%	11.8	14.2	B	12
	Subtotal	1,615	1,440	89.2%	16.4	12.5	B	440
SB	Left Turn	25	21	82.8%	92.1	36.5	F	35
	Through	1,685	1,461	86.7%	43.9	4.0	D	1175
	Right Turn	75	65	86.7%	41.9	8.8	D	50
	Subtotal	1,785	1,546	86.6%	44.3	4.0	D	1259
EB	Left Turn	75	64	85.7%	385.3	126.8	F	454
	Through	30	32	106.3%	389.6	117.9	F	228
	Right Turn	75	61	81.1%	391.2	120.4	F	436
	Subtotal	180	157	87.2%	390.3	122.1	F	1118
WB	Left Turn	70	58	82.4%	114.5	78.9	F	121
	Through	30	36	119.7%	95.8	68.0	F	63
	Right Turn	30	24	80.0%	70.3	40.4	E	31
	Subtotal	130	118	90.5%	99.6	67.3	F	215
Total		3,710	3,261	87.9%	50.5	6.2	D	3033

Intersection 4		Shields St/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	320	280	87.6%	271.9	62.4	F	1397
	Through	1,215	1,108	91.2%	179.5	40.2	F	3646
	Right Turn	70	65	92.9%	157.6	36.2	F	188
	Subtotal	1,605	1,453	90.5%	196.1	44.6	F	5230
SB	Left Turn	15	10	68.0%	73.9	43.4	E	14
	Through	1,295	1,097	84.7%	60.3	5.5	E	1212
	Right Turn	505	449	89.0%	41.7	4.3	D	344
	Subtotal	1,815	1,557	85.8%	55.3	4.4	E	1570
EB	Left Turn	380	331	87.1%	96.4	18.1	F	585
	Through	55	52	94.4%	91.1	17.8	F	87
	Right Turn	445	401	90.1%	86.0	23.0	F	633
	Subtotal	880	784	89.1%	90.8	19.7	F	1304
WB	Left Turn	75	71	94.9%	52.9	9.1	D	69
	Through	45	45	99.1%	45.9	9.4	D	37
	Right Turn	10	6	61.0%	50.6	41.2	D	6
	Subtotal	130	122	93.8%	50.8	6.9	D	112
Total		4,430	3,916	88.4%	113.6	13.6	F	8216

Intersection 5		Shields St/Lake St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn							
	Through	1,535	1,476	96.2%	28.1	16.9	C	761
	Right Turn	65	61	94.5%	20.6	12.4	C	23
	Subtotal	1,600	1,538	96.1%	27.8	16.6	C	785
SB	Left Turn	115	87	75.8%	142.1	39.8	F	227
	Through	1,650	1,385	83.9%	80.6	39.9	F	2045
	Right Turn							
	Subtotal	1,765	1,472	83.4%	84.7	39.5	F	2273
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	145	143	98.9%	72.7	26.6	E	191
	Through							
	Right Turn	190	182	95.7%	57.1	40.6	E	190
	Subtotal	335	325	97.1%	64.4	33.3	E	381
Total		3,700	3,335	90.1%	56.6	17.3	E	3438

Intersection 6		Shields St/Prospect			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	195	178	91.1%	118.3	41.1	F	386
	Through	1,100	1,070	97.3%	85.9	32.7	F	1685
	Right Turn	170	154	90.6%	65.9	30.0	E	186
	Subtotal	1,465	1,402	95.7%	88.0	32.4	F	2257
SB	Left Turn	265	238	89.8%	80.9	11.5	F	353
	Through	1,310	1,096	83.7%	38.4	6.2	D	772
	Right Turn	220	184	83.5%	23.6	5.5	C	79
	Subtotal	1,795	1,518	84.6%	43.8	6.6	D	1205
EB	Left Turn	195	189	96.7%	82.5	14.5	F	285
	Through	480	475	98.9%	43.4	4.7	D	378
	Right Turn	195	197	100.9%	22.8	3.4	C	82
	Subtotal	870	860	98.8%	46.7	4.6	D	745
WB	Left Turn	240	232	96.7%	115.8	42.9	F	493
	Through	775	747	96.4%	99.7	50.9	F	1365
	Right Turn	310	292	94.1%	113.8	86.3	F	609
	Subtotal	1,325	1,271	95.9%	105.7	56.4	F	2467
Total		5,455	5,051	92.6%	71.3	20.2	E	6673

Intersection 8		City Park Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	180	160	89.1%	144.8	45.4	F	426
	Through	125	110	88.3%	108.4	39.8	F	219
	Right Turn	100	96	95.9%	100.2	43.3	F	176
	Subtotal	405	367	90.5%	121.6	43.2	F	821
SB	Left Turn	85	79	92.9%	76.0	19.1	E	110
	Through	115	108	93.6%	62.3	19.4	E	123
	Right Turn	60	62	103.3%	51.5	23.3	D	58
	Subtotal	260	249	95.6%	64.1	19.5	E	291
EB	Left Turn	70	65	92.4%	88.3	16.4	F	105
	Through	575	547	95.1%	46.4	10.5	D	466
	Right Turn	110	111	100.5%	39.0	12.6	D	79
	Subtotal	755	722	95.7%	49.3	10.4	D	649
WB	Left Turn	105	94	89.3%	81.8	13.8	F	141
	Through	555	515	92.8%	19.5	1.5	B	184
	Right Turn	90	76	84.0%	20.2	3.3	C	28
	Subtotal	750	685	91.3%	28.1	3.5	C	353
Total		2,170	2,022	93.2%	57.9	7.4	E	2114

Intersection 9		Constitution Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	5	3	52.0%	7.0	13.2	A	0
	Through	30	24	78.3%	23.8	12.2	C	10
	Right Turn	40	37	92.3%	25.4	5.3	C	17
	Subtotal	75	63	84.0%	24.0	3.1	C	28
SB	Left Turn	45	41	91.6%	25.5	5.1	C	19
	Through	25	27	107.2%	25.4	10.0	C	12
	Right Turn	85	88	103.8%	26.9	6.1	C	44
	Subtotal	155	156	100.8%	26.8	2.9	C	75
EB	Left Turn	55	54	98.9%	93.3	39.4	F	93
	Through	605	578	95.6%	30.8	16.7	C	326
	Right Turn	10	7	66.0%	9.9	14.8	A	1
	Subtotal	670	639	95.4%	35.7	18.5	D	421
WB	Left Turn	45	44	98.2%	62.9	13.9	E	51
	Through	705	649	92.1%	35.7	9.4	D	425
	Right Turn	55	55	100.0%	34.5	8.9	C	35
	Subtotal	805	748	93.0%	37.2	9.0	D	510
Total		1,705	1,607	94.2%	35.2	8.7	D	1034

Intersection 11		Taft Hill Rd/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	155	147	95.0%	66.6	17.0	E	180
	Through	655	650	99.2%	42.7	6.7	D	508
	Right Turn	150	144	95.7%	45.0	7.7	D	119
	Subtotal	960	940	98.0%	46.5	7.2	D	807
SB	Left Turn	120	116	96.6%	122.3	25.9	F	260
	Through	870	828	95.2%	96.5	18.7	F	1465
	Right Turn	95	86	90.0%	98.2	23.1	F	154
	Subtotal	1,085	1,029	94.9%	99.5	19.6	F	1879
EB	Left Turn	185	172	92.8%	189.3	62.3	F	596
	Through	345	337	97.7%	141.3	58.8	F	873
	Right Turn	140	130	92.5%	172.7	56.8	F	410
	Subtotal	670	638	95.3%	161.9	59.4	F	1879
WB	Left Turn	205	177	86.1%	123.2	27.2	F	399
	Through	365	334	91.5%	74.6	28.2	E	457
	Right Turn	90	80	89.0%	86.0	24.4	F	126
	Subtotal	660	591	89.5%	91.4	25.7	F	982
Total		3,375	3,199	94.8%	93.4	14.1	F	5547

Intersection 12		Overland Trail/W Elizabeth St			Roundabout			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	5	3	52.0%	2.7	2.4	A	0
	Through	365	366	100.4%	6.0	0.7	A	40
	Right Turn	95	95	99.6%	5.4	0.7	A	9
	Subtotal	465	464	99.7%	5.9	0.7	A	50
SB	Left Turn	85	81	94.8%	9.4	2.6	A	14
	Through	610	615	100.9%	9.0	2.9	A	102
	Right Turn	10	7	66.0%	8.7	5.4	A	1
	Subtotal	705	703	99.7%	9.1	2.8	A	117
EB	Left Turn	5	3	54.0%	2.7	4.5	A	0
	Through	5	4	76.0%	5.1	8.4	A	0
	Right Turn	10	7	65.0%	6.3	8.1	A	0
	Subtotal	10	7	65.0%	6.3	8.1	A	0
WB	Left Turn	80	69	86.8%	7.4	2.5	A	9
	Through	10	12	123.0%	9.7	4.7	A	2
	Right Turn	80	71	88.8%	7.9	1.5	A	10
	Subtotal	170	153	89.8%	7.8	1.7	A	22
Total		1,350	1,325	98.2%	7.8	1.5	A	189

Intersection 2		Shields St/W Laurel St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn							
	Through	850	819	96.4%	9.3	2.7	A	140
	Right Turn	490	461	94.1%	11.1	1.7	B	94
	Subtotal	1,340	1,280	95.5%	9.9	2.3	A	234
SB	Left Turn	155	159	102.5%	32.4	6.2	C	94
	Through	790	781	98.8%	12.2	1.2	B	175
	Right Turn							
	Subtotal	945	940	99.4%	15.5	1.9	B	269
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	155	142	91.9%	45.0	6.4	D	117
	Through							
	Right Turn	75	72	95.6%	11.9	2.5	B	16
	Subtotal	230	214	93.1%	33.7	4.0	C	133
Total		2,515	2,434	96.8%	14.0	1.8	B	636

Intersection 3		Shields St/W Plum St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	20	13	67.0%	12.8	6.8	B	3
	Through	1,260	1,197	95.0%	1.5	0.3	A	33
	Right Turn	45	48	105.8%	1.8	0.7	A	2
	Subtotal	1,325	1,258	95.0%	1.6	0.4	A	37
SB	Left Turn	20	15	74.5%	29.2	13.0	C	8
	Through	905	890	98.4%	5.6	1.2	A	91
	Right Turn	25	21	82.4%	3.3	2.6	A	1
	Subtotal	950	926	97.4%	5.9	1.1	A	100
EB	Left Turn	65	62	95.2%	55.5	11.0	E	63
	Through	30	36	118.3%	50.3	13.4	D	33
	Right Turn	45	40	88.7%	50.4	6.1	D	37
	Subtotal	140	137	98.1%	52.6	9.4	D	133
WB	Left Turn	25	32	127.2%	50.3	7.1	D	29
	Through	25	20	79.2%	34.1	18.9	C	12
	Right Turn	25	21	83.6%	14.4	5.5	B	6
	Subtotal	75	73	96.7%	36.3	6.1	D	47
Total		2,490	2,394	96.1%	8.3	1.2	A	317

Intersection 4		Shields St/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	170	162	95.2%	46.5	13.7	D	138
	Through	1,005	965	96.0%	15.4	3.2	B	273
	Right Turn	70	63	90.3%	10.8	4.1	B	13
	Subtotal	1,245	1,190	95.6%	19.3	3.6	B	423
SB	Left Turn	30	25	82.3%	49.9	14.8	D	23
	Through	775	769	99.2%	10.0	1.7	B	141
	Right Turn	170	169	99.4%	5.7	1.2	A	18
	Subtotal	975	962	98.7%	10.4	1.6	B	181
EB	Left Turn	315	294	93.4%	58.3	8.4	E	314
	Through	35	31	89.1%	60.0	13.4	E	34
	Right Turn	360	335	93.2%	52.6	7.3	D	324
	Subtotal	710	661	93.1%	55.7	7.4	E	672
WB	Left Turn	20	17	86.5%	35.5	25.5	D	11
	Through	10	5	52.0%	15.8	25.7	B	2
	Right Turn	10	5	51.0%	17.0	25.1	B	2
	Subtotal	40	28	69.0%	40.2	17.2	D	14
Total		2,970	2,841	95.7%	25.2	2.6	C	1291

Intersection 5		Shields St/Lake St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn							
	Through	1,395	1,374	98.5%	4.6	1.2	A	116
	Right Turn	185	181	97.8%	6.1	1.4	A	20
	Subtotal	1,580	1,555	98.4%	4.8	1.2	A	136
SB	Left Turn	150	137	91.5%	61.1	19.4	E	154
	Through	910	885	97.2%	9.3	2.9	A	151
	Right Turn							
	Subtotal	1,060	1,022	96.4%	17.1	6.3	B	305
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	75	72	96.5%	43.9	10.1	D	58
	Through							
	Right Turn	45	44	98.7%	5.3	1.5	A	4
	Subtotal	120	117	97.3%	30.3	8.2	C	63
Total		2,760	2,693	97.6%	10.3	2.9	B	503

Intersection 6		Shields St/Prospect			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	70	65	93.1%	33.6	9.0	C	40
	Through	1,120	1,109	99.0%	27.1	3.6	C	551
	Right Turn	165	156	94.3%	21.9	6.7	C	63
	Subtotal	1,355	1,330	98.1%	26.8	3.9	C	654
SB	Left Turn	175	170	97.3%	47.1	10.7	D	147
	Through	745	718	96.4%	5.3	1.6	A	70
	Right Turn	65	68	104.3%	2.1	0.8	A	3
	Subtotal	985	956	97.0%	12.6	3.5	B	219
EB	Left Turn	285	265	92.9%	415.8	30.5	F	2018
	Through	845	785	92.9%	399.9	36.4	F	5752
	Right Turn	180	171	95.1%	364.3	34.0	F	1143
	Subtotal	1,310	1,220	93.2%	398.6	34.2	F	8913
WB	Left Turn	85	81	94.9%	60.2	10.5	E	89
	Through	275	276	100.3%	41.2	3.9	D	208
	Right Turn	175	175	100.2%	19.3	2.1	B	62
	Subtotal	535	532	99.4%	37.1	3.7	D	359
Total		4,185	4,038	96.5%	143.8	9.9	F	10145

Intersection 8		City Park Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	30	28	93.0%	18.6	9.9	B	10
	Through	45	40	89.8%	30.3	6.5	C	22
	Right Turn	45	44	97.3%	31.4	5.9	C	25
	Subtotal	120	112	93.4%	28.4	3.4	C	57
SB	Left Turn	45	50	111.1%	18.3	3.5	B	17
	Through	40	0	0.0%	0.0	0.0	A	0
	Right Turn	25	51	205.2%	28.9	5.4	C	27
	Subtotal	110	101	92.1%	23.6	3.6	C	44
EB	Left Turn	70	69	99.0%	51.0	9.7	D	65
	Through	545	522	95.8%	18.9	4.9	B	181
	Right Turn	85	78	92.0%	10.4	5.4	B	15
	Subtotal	700	670	95.7%	21.2	4.4	C	260
WB	Left Turn	40	34	85.3%	40.5	12.0	D	25
	Through	200	176	88.1%	14.2	2.9	B	46
	Right Turn	60	51	85.5%	5.5	1.5	A	5
	Subtotal	300	262	87.2%	16.6	3.4	B	76
Total		1,230	1,145	93.1%	21.1	2.7	C	438



Intersection 9		Constitution Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	5	3	64.0%	15.9	13.1	B	1
	Through	5	6	110.0%	14.9	19.5	B	2
	Right Turn	25	24	97.6%	23.0	10.0	C	10
	Subtotal	35	33	94.6%	20.6	7.8	C	13
SB	Left Turn	45	43	94.4%	25.3	5.9	C	20
	Through	15	10	68.0%	21.7	11.0	C	4
	Right Turn	40	38	95.8%	24.9	4.9	C	17
	Subtotal	100	91	91.0%	24.8	4.7	C	41
EB	Left Turn	35	33	93.7%	35.8	9.3	D	22
	Through	615	603	98.0%	9.1	2.0	A	100
	Right Turn	10	6	64.0%	8.1	10.7	A	1
	Subtotal	660	642	97.2%	10.8	2.2	B	123
WB	Left Turn	5	3	58.0%	20.7	18.0	C	1
	Through	185	163	88.1%	5.6	1.6	A	17
	Right Turn	20	20	102.0%	7.1	1.4	A	3
	Subtotal	210	186	88.7%	6.4	1.7	A	21
Total		1,005	952	94.7%	12.3	1.5	B	198

Intersection 11		Taft Hill Rd/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	65	60	91.8%	79.6	11.5	E	87
	Through	910	872	95.8%	90.3	9.8	F	1444
	Right Turn	140	126	89.6%	94.3	11.0	F	217
	Subtotal	1,115	1,057	94.8%	90.2	9.8	F	1748
SB	Left Turn	115	113	98.3%	40.6	8.9	D	84
	Through	675	681	100.9%	25.3	3.6	C	316
	Right Turn	60	58	96.5%	27.3	5.4	C	29
	Subtotal	850	852	100.3%	27.6	3.6	C	429
EB	Left Turn	150	145	96.5%	226.9	70.3	F	602
	Through	295	292	98.8%	185.5	70.4	F	991
	Right Turn	190	185	97.6%	208.9	73.6	F	710
	Subtotal	635	622	97.9%	203.1	70.0	F	2304
WB	Left Turn	125	104	83.0%	129.6	50.2	F	247
	Through	135	124	92.1%	30.9	8.0	C	70
	Right Turn	40	35	88.5%	36.3	10.9	D	24
	Subtotal	300	264	87.9%	71.3	20.6	E	340
Total		2,900	2,795	96.4%	97.1	16.1	F	4822

Intersection 12		Overland Trail/W Elizabeth St			Roundabout			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	5	4	88.0%	5.6	5.4	A	0
	Through	560	566	101.1%	7.0	1.8	A	73
	Right Turn	85	83	97.9%	6.3	1.8	A	10
	Subtotal	650	654	100.6%	6.9	1.8	A	83
SB	Left Turn	45	41	91.1%	4.2	0.8	A	3
	Through	335	345	102.8%	4.1	0.9	A	26
	Right Turn	15	11	72.0%	1.7	1.5	A	0
	Subtotal	395	396	100.3%	4.1	0.8	A	29
EB	Left Turn	15	13	86.7%	5.0	2.0	A	1
	Through	5	7	136.0%	6.5	3.6	A	1
	Right Turn	5	1	22.0%	2.1	5.1	A	0
	Subtotal	25	21	83.6%	6.0	1.9	A	2
WB	Left Turn	65	59	90.5%	11.0	2.7	B	12
	Through	5	12	230.0%	13.9	6.1	B	3
	Right Turn	80	72	89.6%	11.2	4.7	B	15
	Subtotal	150	142	94.7%	11.4	3.4	B	30
Total		1,220	1,213	99.4%	6.5	1.0	A	144

Intersection 2		Shields St/W Laurel St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	1,040	916	88.1%	24.7	12.5	C	414
	Through	520	459	88.3%	23.2	10.2	C	196
	Right Turn	520	459	88.3%	23.2	10.2	C	196
	Subtotal	1,560	1,375	88.2%	24.3	11.5	C	610
SB	Left Turn	120	97	81.0%	246.5	79.0	F	439
	Through	1,175	1,020	86.8%	158.3	15.7	F	2961
	Right Turn	1,175	1,020	86.8%	158.3	15.7	F	2961
	Subtotal	1,295	1,118	86.3%	165.8	18.0	F	3400
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	605	553	91.3%	244.6	148.1	F	2478
	Through	190	173	90.8%	142.2	76.7	F	450
	Right Turn	190	173	90.8%	142.2	76.7	F	450
	Subtotal	795	725	91.2%	220.9	130.9	F	2928
Total		3,650	3,218	88.2%	112.1	21.6	F	6938

Intersection 3		Shields St/W Plum St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	85	73	85.3%	108.3	49.4	F	144
	Through	1,460	1,293	88.6%	11.8	13.2	B	281
	Right Turn	70	59	84.4%	10.1	13.1	B	11
	Subtotal	1,615	1,425	88.2%	17.2	13.2	B	436
SB	Left Turn	25	21	82.0%	75.8	24.4	E	28
	Through	1,685	1,468	87.1%	43.0	8.2	D	1158
	Right Turn	75	68	90.4%	42.5	12.7	D	53
	Subtotal	1,785	1,556	87.2%	43.4	8.1	D	1239
EB	Left Turn	75	66	87.3%	281.5	156.2	F	338
	Through	30	31	104.7%	276.5	152.7	F	159
	Right Turn	75	63	84.0%	286.1	135.1	F	330
	Subtotal	180	160	88.8%	282.4	143.8	F	828
WB	Left Turn	70	70	99.6%	104.5	47.6	F	134
	Through	30	25	84.7%	96.8	86.4	F	45
	Right Turn	30	23	78.0%	48.3	32.3	D	21
	Subtotal	130	119	91.2%	92.3	47.1	F	199
Total		3,710	3,259	87.8%	45.3	8.3	D	2702

Intersection 4		Shields St/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	320	273	85.4%	280.7	69.6	F	1406
	Through	1,215	1,117	91.9%	176.1	40.8	F	3606
	Right Turn	70	66	94.9%	156.0	36.1	F	190
	Subtotal	1,605	1,456	90.7%	194.4	45.9	F	5202
SB	Left Turn	15	11	72.7%	82.5	22.0	F	16
	Through	1,295	1,109	85.6%	58.5	4.5	E	1190
	Right Turn	505	465	92.1%	46.7	14.1	D	398
	Subtotal	1,815	1,585	87.3%	55.3	6.8	E	1604
EB	Left Turn	380	307	80.8%	111.9	8.4	F	630
	Through	55	50	91.1%	102.2	11.2	F	94
	Right Turn	445	367	82.5%	103.1	10.4	F	693
	Subtotal	880	724	82.3%	106.6	6.6	F	1417
WB	Left Turn	75	72	95.6%	53.2	9.6	D	70
	Through	45	44	97.8%	44.9	11.7	D	36
	Right Turn	10	6	64.0%	61.7	38.8	E	7
	Subtotal	130	122	93.9%	50.5	8.9	D	113
Total		4,430	3,887	87.7%	115.6	17.3	F	8337

Intersection 5		Shields St/Lake St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn							
	Through	1,535	1,473	96.0%	30.8	16.7	C	832
	Right Turn	65	64	98.5%	24.5	14.4	C	29
	Subtotal	1,600	1,537	96.1%	30.5	16.5	C	861
SB	Left Turn	115	89	77.7%	137.1	55.9	F	225
	Through	1,650	1,372	83.2%	71.9	51.9	E	1809
	Right Turn							
	Subtotal	1,765	1,462	82.8%	76.2	52.1	E	2034
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn	145	141	96.9%	72.9	19.8	E	188
	Through							
	Right Turn	190	184	97.1%	54.2	31.7	D	183
	Subtotal	335	325	97.0%	62.8	25.1	E	371
Total		3,700	3,323	89.8%	54.6	26.4	D	3266

Intersection 6		Shields St/Prospect			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	195	179	91.9%	118.7	43.2	F	390
	Through	1,100	1,069	97.2%	99.7	48.6	F	1953
	Right Turn	170	154	90.7%	83.0	46.8	F	235
	Subtotal	1,465	1,402	95.7%	100.5	47.0	F	2577
SB	Left Turn	265	238	89.8%	72.1	14.2	E	315
	Through	1,310	1,084	82.7%	33.6	8.0	C	668
	Right Turn	220	181	82.1%	22.5	6.2	C	75
	Subtotal	1,795	1,503	83.7%	38.6	7.5	D	1057
EB	Left Turn	195	190	97.3%	86.3	19.9	F	300
	Through	480	474	98.7%	40.9	3.5	D	355
	Right Turn	195	195	100.0%	22.5	4.0	C	80
	Subtotal	870	859	98.7%	46.1	5.7	D	736
WB	Left Turn	240	229	95.4%	100.7	36.8	F	423
	Through	775	748	96.5%	88.7	41.8	F	1216
	Right Turn	310	295	95.0%	92.9	65.2	F	502
	Subtotal	1,325	1,271	95.9%	91.7	45.0	F	2141
Total		5,455	5,035	92.3%	69.7	21.8	E	6511

Intersection 8		City Park Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS	Total Person Delay (min)
			Average	Percent	Average	Std. Dev.		
NB	Left Turn	180	161	89.2%	152.7	59.6	F	450
	Through	125	102	81.8%	157.1	59.2	F	295
	Right Turn	100	90	90.0%	165.1	70.6	F	272
	Subtotal	405	353	87.1%	157.8	62.0	F	1017
SB	Left Turn	85	76	89.8%	56.7	17.0	E	79
	Through	115	106	91.9%	59.5	13.4	E	115
	Right Turn	60	57	95.3%	47.6	11.7	D	50
	Subtotal	260	239	92.0%	56.2	12.9	E	245
EB	Left Turn	70	61	87.6%	128.0	20.3	F	144
	Through	575	534	92.8%	82.8	19.2	F	811
	Right Turn	110	102	92.6%	53.9	14.0	D	101
	Subtotal	755	697	92.3%	82.2	19.0	F	1055
WB	Left Turn	105	95	90.3%	118.0	40.0	F	205
	Through	555	509	91.7%	50.6	34.3	D	472
	Right Turn	90	71	79.1%	36.1	28.2	D	47
	Subtotal	750	675	90.0%	58.0	34.6	E	724
Total		2,170	1,964	90.5%	83.2	14.2	F	3041

Intersection 9		Constitution Ave/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	5	3	52.0%	8.2	12.8	A	0
	Through	30	27	89.0%	24.6	6.1	C	12
	Right Turn	40	35	87.0%	25.4	6.4	C	16
	Subtotal	75	64	85.5%	24.9	5.7	C	29
SB	Left Turn	45	45	99.3%	24.8	5.2	C	20
	Through	25	27	106.8%	25.2	8.7	C	12
	Right Turn	85	81	95.4%	26.4	3.7	C	39
	Subtotal	155	153	98.4%	25.9	1.8	C	72
EB	Left Turn	55	52	94.0%	41.0	9.9	D	39
	Through	605	573	94.6%	13.7	1.0	B	143
	Right Turn	10	7	67.0%	7.8	7.3	A	1
	Subtotal	670	631	94.2%	15.8	1.3	B	183
WB	Left Turn	45	44	96.7%	52.2	17.5	D	42
	Through	705	642	91.1%	29.3	14.4	C	345
	Right Turn	55	54	98.5%	24.8	18.3	C	25
	Subtotal	805	740	91.9%	30.1	14.7	C	411
Total		1,705	1,587	93.1%	23.8	7.4	C	695

Intersection 11		Taft Hill Rd/W Elizabeth St			Signal			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	155	150	96.5%	72.5	27.9	E	199
	Through	655	637	97.3%	45.3	13.0	D	530
	Right Turn	150	143	95.5%	48.3	13.1	D	127
	Subtotal	960	930	96.9%	49.9	14.7	D	855
SB	Left Turn	120	114	94.8%	126.7	23.0	F	264
	Through	870	823	94.6%	101.4	21.3	F	1530
	Right Turn	95	85	89.5%	100.7	21.3	F	157
	Subtotal	1,085	1,022	94.1%	104.0	21.1	F	1951
EB	Left Turn	185	168	90.9%	238.0	76.6	F	733
	Through	345	324	93.9%	193.3	73.0	F	1149
	Right Turn	140	126	89.6%	221.4	76.2	F	509
	Subtotal	670	618	92.2%	212.1	74.2	F	2392
WB	Left Turn	205	173	84.6%	134.4	68.9	F	427
	Through	365	321	88.1%	85.2	58.4	F	502
	Right Turn	90	81	89.8%	88.8	53.6	F	132
	Subtotal	660	576	87.2%	101.4	60.2	F	1061
Total		3,375	3,145	93.2%	106.3	16.9	F	6259

Intersection 12		Overland Trail/W Elizabeth St			Roundabout			
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)			Total Person Delay (min)
			Average	Percent	Average	Std. Dev.	LOS	
NB	Left Turn	5	2	40.0%	1.8	2.3	A	0
	Through	365	362	99.0%	5.9	0.9	A	39
	Right Turn	95	95	99.6%	5.0	1.0	A	9
	Subtotal	465	458	98.5%	5.7	0.9	A	48
SB	Left Turn	85	79	92.7%	9.2	2.8	A	13
	Through	610	613	100.6%	9.2	2.9	A	104
	Right Turn	10	8	82.0%	11.4	5.8	B	2
	Subtotal	705	700	99.3%	9.3	2.8	A	119
EB	Left Turn	5	3	52.0%	2.5	5.5	A	0
	Through	5	4	84.0%	6.2	8.8	A	0
	Right Turn	10	7	68.0%	7.0	8.8	A	1
	Subtotal	10	7	68.0%	7.0	8.8	A	1
WB	Left Turn	80	67	83.3%	7.2	2.5	A	9
	Through	10	12	115.0%	8.5	4.6	A	2
	Right Turn	80	69	86.4%	6.9	2.5	A	9
	Subtotal	170	147	86.6%	7.4	1.6	A	19
Total		1,350	1,313	97.2%	7.8	1.4	A	187