



An Intersection Public Safety Program



TBITE QUARTERLY MEETING

Citywide Crash Analysis and Traffic Safety Cameras

*Guest Speaker: Mike Frederick, Manager Neighborhood
Transportation, City of St. Petersburg*

An Intersection Public Safety Program



The Need For A Camera Program

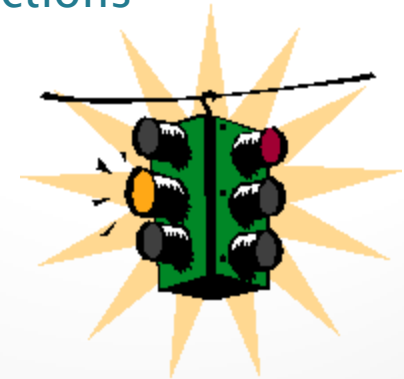
Independent Analysis of Crash Data

Evaluation of Contractors / Contracts

The Need for a Camera Program:

Making Intersections Safer – Existing Programs Include:

- LED Traffic Signals
- White Enforcement Lights at Major Intersections
- Traffic Signal Backplates
- Yellow – Change Interval
- All – Red Clearance Interval
- Dilemma Zone Identification
- Eliminate Need To Stop – Synchronization
- Intersection Safety Evaluations & Analysis
- CIP – Intersection Modification Program
- High Visibility Police Enforcement Program
- Ongoing Public Education Program

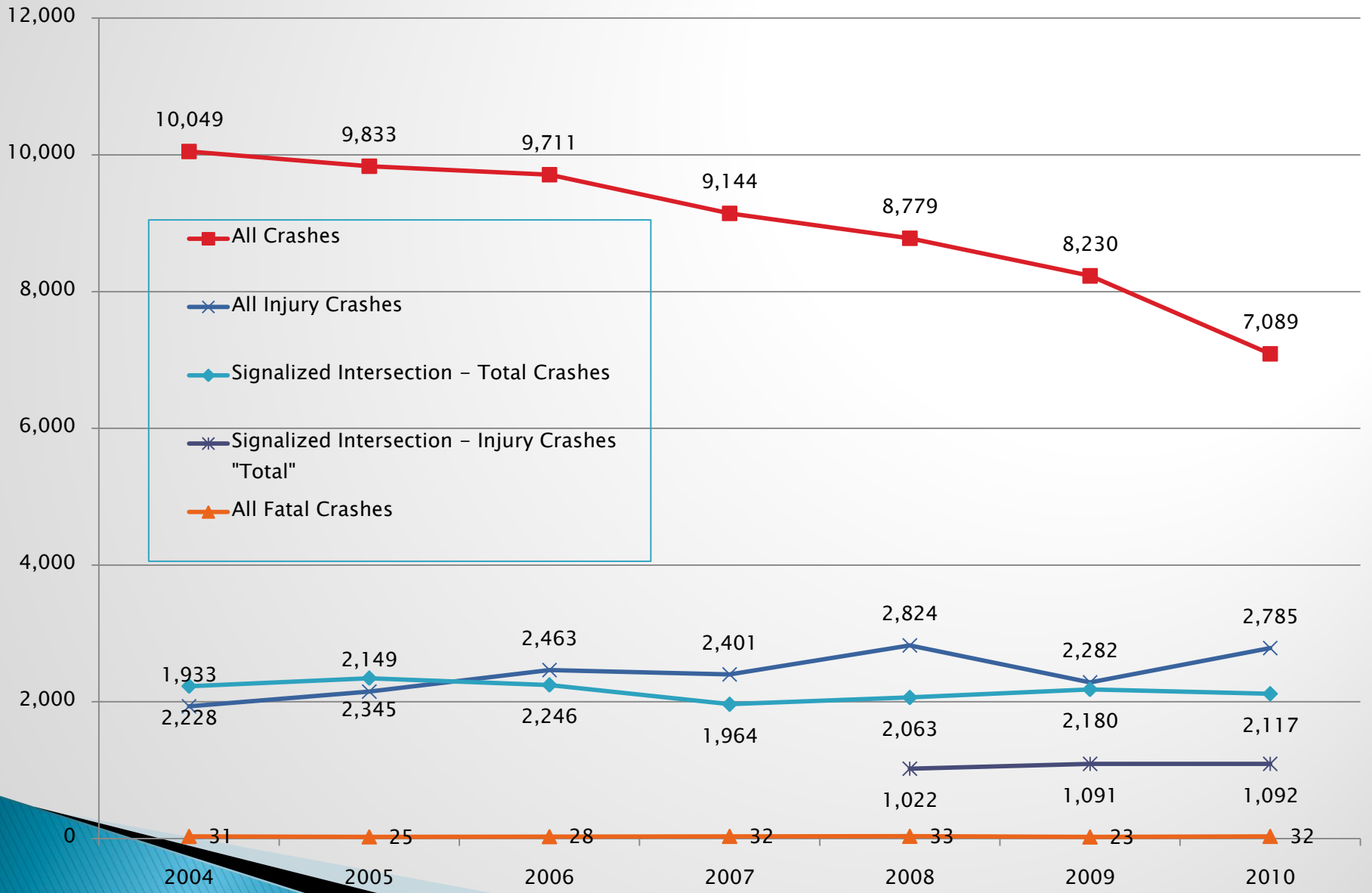


Independent Analysis of Crash Data:

Crashes from within 300' of all 298 signalized intersections reviewed.
(between January 2008 & September 2010 inclusive)

Crash Analysis Included: Angle
 Right-on-red
 Rear-end
 Red Light Running
 Crash Severity

- 1,219 of 5,950 or 20.9% of all crashes* at Signalized Intersections caused by red light running.
- 13 of 21 fatal crashes at Signalized Intersections caused by red light running
- Average over 35.8 red light running crashes* per month
- Average over 7.7 RLR injury crashes * per month



Note: Based on raw data from the City of St. Petersburg Police Department computer system.

- ▶ While vehicle volume, vehicle miles of travel and overall crashes are down 13% last year from 8,230 to 7,089 – total crashes at our 298 signalized, intersections have remained fairly level over the last 6-years with 2,117 crashes last year.
- ▶ Also, total fatalities are up last year from 23 to 32 and at signalized intersections they are up from 2 in 2009 to 12 in 2010.
- ▶ As well, overall injuries are up 18% from 2,282 to 2,785.
- ▶ Injuries at signalized intersections are also remaining flat over the last 3-years at 1,092 per year.

1st Step – Review Crash Long Forms

- ▶ 298 Intersections
- ▶ Over 2000 Crash Long Forms
- ▶ Crash Long Forms are Closest to the Source
 - Provide the most insight as to crash characteristics and circumstances
 - Provide officer insights and descriptions
 - Eliminate database entry errors

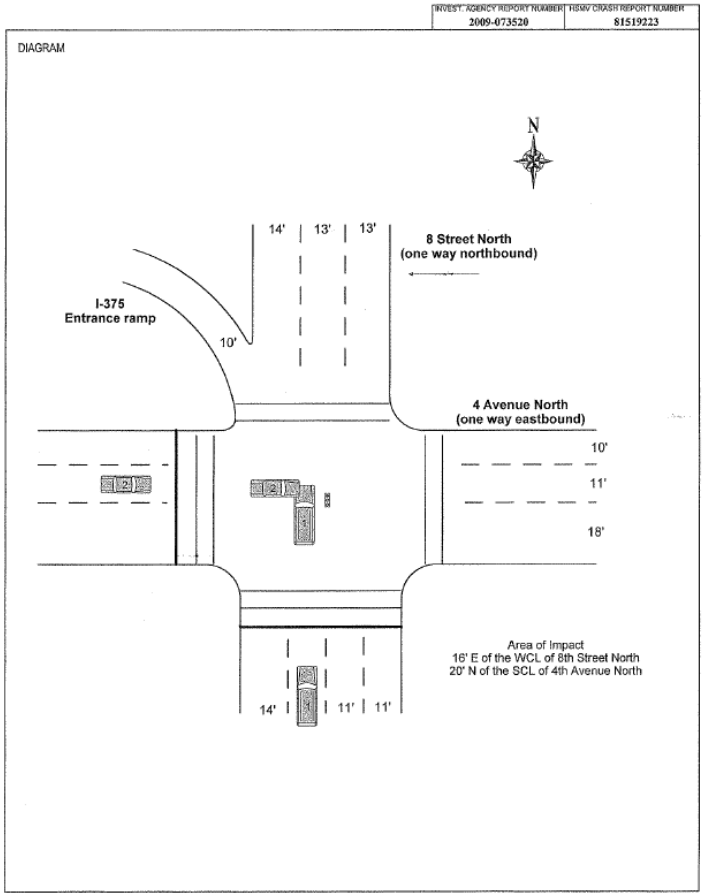
1st Step – Review Crash Long Forms

FLORIDA TRAFFIC CRASH REPORT LONG FORM

MAIL TO: DEPT. OF HIGHWAY SAFETY & MOTOR VEHICLES, TRAFFIC CRASH RECORDS, NEIL KIRWAN BUILDING, TALLAHASSEE, FL 32399-0909

DO NOT WRITE IN THIS SPACE

DATE OF CRASH 10/08/2009		TIME OF CRASH 1:52 AM		TIME OFFICER NOTIFIED 1:55 AM		INVEST. AGENCY REPORT NUMBER 2009-073520		HSMV CRASH REPORT NUMBER 81519223	
COUNTRY / CITY CODE 04/64		FEET OF (MILES) N 8 E W of ST PETERSBURG		CITY OR TOWN ST PETERSBURG		COUNTY PINELLAS			
AT NODE NO. of FEET OF (MILES) 4		NEXT NODE NO. 2		NO. OF LANES 2 DIVIDED		ON STREET, ROAD OR HIGHWAY 8TH ST N		FROM INTERSECTION OF (street, road or highway) 4TH AV N	
DRIVER ACTION 1 Driver 2 ALTA 3 N/A		YEAR 2008		MAKE ACUR		TYPE USE 01 01		VEH. LIC/PLP NO. FL	
TRAILER OR TOWED VEHICLE INFORMATION		VEHICLE TRAVELING ON AT		EST. MPH/Posted Speed 35		EST. VEHICLE DAMAGE \$5,000.00		1. Sticking 2. Swelling 3. No Damage	
MOTOR VEHICLE INSURANCE COMPANY (LIABILITY OR PIP)		POLICY NUMBER		VEHICLE REMOVED BY SUNSHINE TOWING		1 Tow Outside List 2 Tow Owner's Request		3 Other 4 Other	
NAME OF VEHICLE OWNER (Check Box if Same As Driver)		CURRENT ADDRESS (Number and Street)		CITY AND STATE		ZIP CODE			
NAME OF MOTOR CARRIER (Commercial Vehicle Only)		CURRENT ADDRESS (Number and Street)		CITY AND STATE		ZIP CODE		US DOT or ICC MC IDENTIFICATION NUMBERS	
NAME OF DRIVER (Take From Driver License) / PEDESTRIAN		CURRENT ADDRESS (Number and Street)		CITY, STATE AND ZIP CODE		DATE OF BIRTH			
DRIVER LICENSE NUMBER		STATE		ALCOHOL TEST TYPE		RESULTS		AD/DRUG	
INJURIOUS MATERIALS (When Transported)		PLACARDED		IF YES, HAZARDOUS OR OTHER HAZARD FROM DAMAGE OR BOX CONTENTS, INDICATE NUMBER FROM BOTTOM OF ENDOUR		IF YES, HAZARDOUS MATERIALS (DOT NUMBER FROM BOTTOM OF ENDOUR)		IF YES, OTHER DRIVER REASON FOR CRASH OR INJURY	
DRIVER ACTION 1 Driver 2 ALTA 3 N/A		YEAR 2009		MAKE NISS		TYPE USE 01 01		VEH. LIC/PLP NO. FL	
TRAILER OR TOWED VEHICLE INFORMATION		VEHICLE TRAVELING ON AT		EST. MPH/Posted Speed 30		EST. VEHICLE DAMAGE \$5,000.00		1. Sticking 2. Swelling 3. No Damage	
MOTOR VEHICLE INSURANCE COMPANY (LIABILITY OR PIP)		POLICY NUMBER		VEHICLE REMOVED BY SUNSHINE TOWING		1 Tow Outside List 2 Tow Owner's Request		3 Other 4 Other	
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2nd Step – Transfer Data

- ▶ Transfer Pertinent Long Form Data to Spreadsheet
 - Transfer pertinent crash criteria measures
 - To provide further analysis and summarization

Crash Criteria Measures

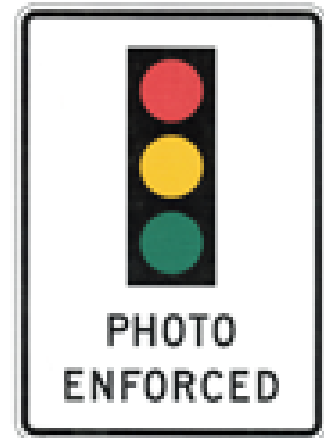
Overall Crash Frequency	Red-Light-Running Crash Frequency
Overall Crash Rate	Red-Light-Running Crash Rate
Overall Angle Crashes	Red-Light-Running Crash Severity
Overall Right-on-Red Crashes	Red-Light-Running Rate Quality Control
Overall Rear-End Crashes	Red-Light-Related Rear-End

3rd Step – Analyze Data

- ▶ Analyze Based on Selected Crash Criteria
 - Use conventional crash analysis formulas to determine intersection performance against individual crash criteria
 - Use weighted formulas to mold individual rankings into overall weighted intersection performance rankings
 - This system allowed incorporation of the safety factors most important to St. Petersburg

Criteria for Intersection Determination

- ▶ Overall Crash Frequency
- ▶ Angle Crash Frequency
- ▶ Right-Turn-on-Red Crash Frequency
- ▶ Red-Light-Running Crash Frequency
- ▶ Red-Light-Running Crash Severity Rate



3rd Step – Analyze Data

Weight	Crash Ranking	Percent Weighting
15	Overall Crash Frequency	15.0%
20	Overall Angle Crashes	20.0%
5	Overall Right-on-Red Crashes	5.0%
50	Red-Light-Running Crash	50.0%
10	Red-Light-Running Crash	10.0%

Overall Weighted Rankings										
Overall Rank	Signal No.	Intersection Approach 1	Intersection Approach 2	Category Weighting Index (Weight x Rank)					Total Rank Weighting Index	
				Overall Crash Frequency	Angle Crash Frequency	Right-on-Red Crash Frequency	Red-Light-Running Crash	Red-Light-Running Crash		
19										
20	1	665	34th Street	1st Avenue N	150	100	25	250	220	745
21	2	251	8th Street	4 Avenue N	375	20	295	50	10	750
22	3	766	49th Street	30 Avenue N	795	40	295	150	100	1380
23	4	353	tr. Martin Luther King Jr. Stro.	5 Avenue S	750	40	295	250	60	1395
24	5	397	66th Street	1st Avenue N	945	160	115	100	140	1460
25	6	230	6th Street	5 Avenue S	1020	100	295	150	150	1715
26	7	643	34th Street	38 Avenue N	15	100	50	850	760	1775
27	8	125	4th Street	Gandy Boulevard	60	340	295	500	80	1775
28	9	237	tr. Martin Luther King Jr. Stro.	Gandy Boulevard	75	340	295	850	250	1810
29	10	657	34th Street	9 Avenue N	240	420	115	850	190	1815
30	11	667	34th Street	1st Avenue S	420	200	295	600	430	1945
31	12	376	66th Street	30 Avenue N	645	230	115	950	90	1980
32	13	332	58th Street	1st Avenue N	1020	160	295	400	160	2035
33	14	255	8th Street	1st Avenue N	1110	200	295	400	70	2075
34	15	465	16th Street	16 Avenue S	405	540	50	850	250	2095
35	16	177	4th Street	4 Avenue N	1245	80	295	350	120	2100
36	17	165	4th Street	22 Avenue N	210	980	50	850	20	2110
37	18	783	49th Street	1st Avenue S	720	200	295	600	430	2245
38	19	346	tr. Martin Luther King Jr. Stro.	1st Avenue N	1245	200	295	600	50	2390
39	20	176	4th Street	5 Avenue N	495	340	295	600	710	2440
40	21	366	tr. Martin Luther King Jr. Stro.	22 Avenue S	540	640	295	850	190	2515
41	22	488	I-275	22 Avenue N	300	1300	295	500	170	2565
42	23	261	8th Street	5 Avenue S	1350	280	295	600	180	2705
43	24	347	tr. Martin Luther King Jr. Stro.	Central Avenue	1110	420	295	850	250	2925
44	25	825	58th Street	9 Avenue N	1245	420	115	850	330	2960
45	26	490	0th Street (I-275 S/Buffram	5 Avenue N	465	380	295	1400	450	2990
46	27	608	31st Street	22 Avenue S	900	280	295	1400	280	3155
47	28	781	49th Street	1st Avenue N	945	420	295	850	760	3270
48	29	435	16th Street	22 Avenue N	465	840	295	1400	280	3280
49	30	340	tr. Martin Luther King Jr. Stro.	5 Avenue N	720	540	115	1650	460	3485
50	31	386	66th Street	13 Avenue N	855	640	50	1650	460	3655
51	32	186	4th Street	5 Avenue S	1350	380	25	850	1150	3755
52	33	428	16th Street	38 Avenue N	945	640	295	1650	230	3760
53	34	324	tr. Martin Luther King Jr. Stro.	30 Avenue N	1455	540	115	1650	120	3880
54	35	182	4th Street	1st Avenue S	1530	540	295	1400	210	3975
55	36	519	22nd Street	1 Avenue S	1755	420	295	1400	110	3980
56	37	446	16th Street	5 Avenue N	795	640	295	2050	340	4120
57	38	291	tr. Martin Luther King Jr. Stro.	94 Avenue N	360	980	295	2300	360	4245
58	39	328	58th Street	5 Avenue N	300	980	50	1650	1340	4320
59	40	602	31st Street	5 Avenue S	1020	540	295	2050	800	4705
60	41	452	16th Street	1st Avenue S	1530	980	115	1650	460	4735

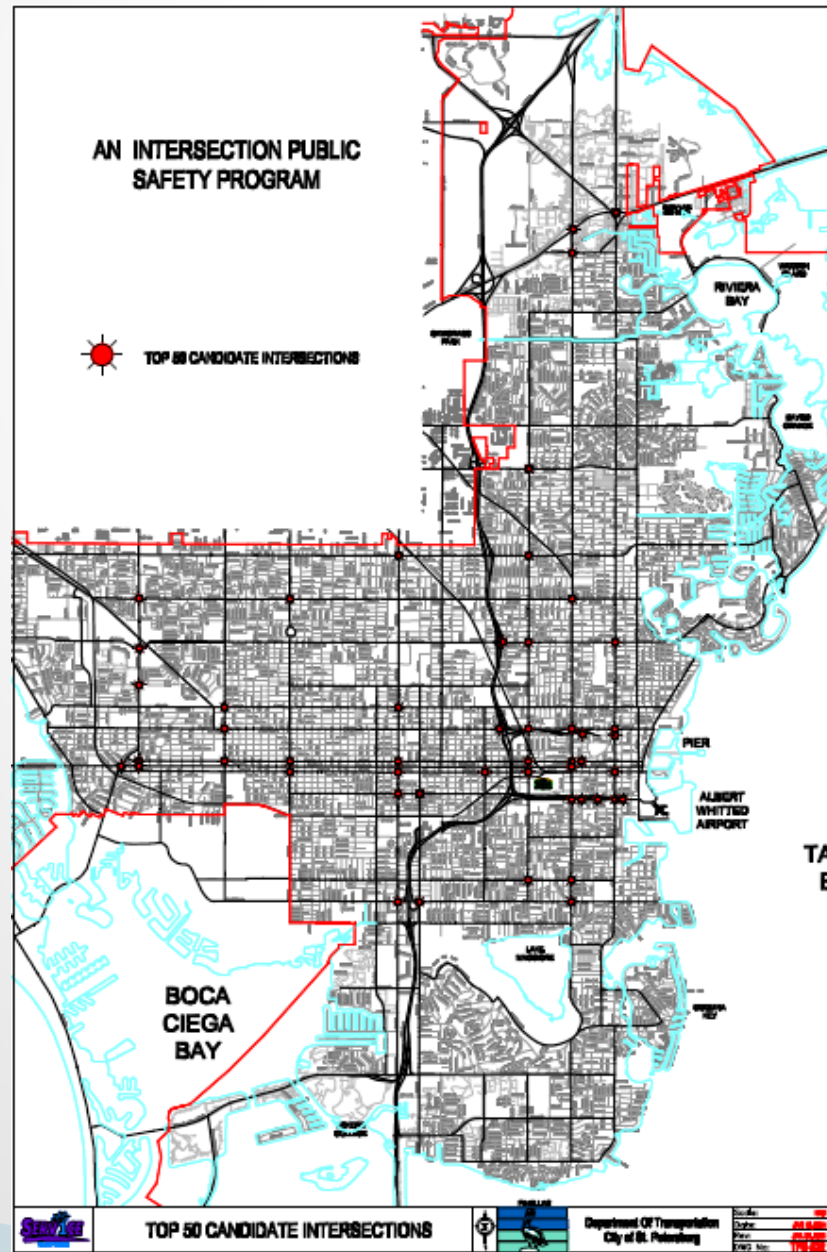
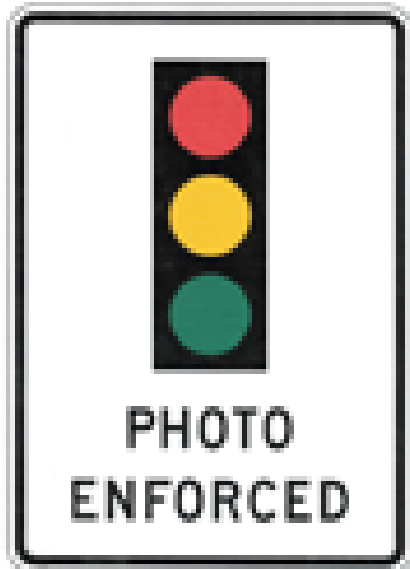
3rd Step – Analyze Data

Table 3.2: Rank Weighting Index Example (1st Street & 2nd Avenue Intersection)				
Analysis Categories	Data From Crash Long Forms	Category Rank (Out of All Intersections)	Rank Weighting (points out of 100)	Weighted Category Index
Overall Crash Frequency (crashes)	50	10	15	$10 \times 15 = 150$
Angle Crash Frequency (crashes)	30	2	20	$2 \times 20 = 40$
Right-on-Red Crash Frequency (crashes)	5	25	5	$25 \times 5 = 125$
Red-Light-Running Crash Frequency (crashes)	20	10	50	$10 \times 50 = 500$
Red-Light-Running Severity Rate (per million entering vehicles)	2.5	1	10	$1 \times 10 = 10$
Overall Rank Weighting Index (Sum of Weighted Category Indices)				825

Top 50 High Hazard Candidate Intersections

Overall Rank	Intersection Approach 1	Intersection Approach 2
1	34th Street	1st Avenue N
2	8th Street	4 Avenue N
3	49th Street	30 Avenue N
4	Dr. Martin Luther King Jr. Street	5 Avenue S
5	66th Street	1st Avenue N
6	6th Street	5 Avenue S
7	34th Street	38 Avenue N
8	4th Street	Gandy Boulevard
9	Dr. Martin Luther King Jr. Street	Gandy Boulevard
10	34th Street	9 Avenue N
11	34th Street	1st Avenue S
12	66th Street	30 Avenue N
13	58th Street	1st Avenue N
14	8th Street	1st Avenue N
15	16th Street	18 Avenue S
16	4th Street	4 Avenue N
17	4th Street	22 Avenue N
18	49th Street	1st Avenue S
19	Dr. Martin Luther King Jr. Street	1st Avenue N
20	4th Street	5 Avenue N
21	Dr. Martin Luther King Jr. Street	22 Avenue S
22	I-275	22 Avenue N
23	8th Street	5 Avenue S
24	Dr. Martin Luther King Jr. Street	Central Avenue
25	58th Street	9 Avenue N

Overall Rank	Intersection Approach 1	Intersection Approach 2
26	20th Street (I-275 S/B off-ramp)	5 Avenue N
27	31st Street	22 Avenue S
28	49th Street	1st Avenue N
29	16th Street	22 Avenue N
30	Dr. Martin Luther King Jr. Street	5 Avenue N
31	66th Street	13 Avenue N
32	4th Street	5 Avenue S
33	16th Street	38 Avenue N
34	Dr. Martin Luther King Jr. Street	30 Avenue N
35	4th Street	1st Avenue S
36	22nd Street	1 Avenue S
37	16th Street	5 Avenue N
38	Dr. Martin Luther King Jr. Street	94 Avenue N
39	58th Street	5 Avenue N
40	31st Street	5 Avenue S
41	16th Street	1st Avenue S
42	66th Street	Central Avenue
43	34th Street	22 Avenue S
44	16th Street	54 Avenue N
45	Pasadena Avenue	Central Avenue
46	Dr. Martin Luther King Jr. Street	18 Avenue S
47	16th Street	1st Avenue N
48	34th Street	5 Avenue S
49	66th Street	22 Avenue N
50	3rd Street	4 Avenue S



Evaluation of Contractors & Contracts:

Resolution No 2010-524, October 7, 2010.

Red Light Camera Companies Include:

Gatso USA,
Sensys America,
Road Safety Cameras,
Nestor Traffic Systems,
Redflex Traffic Systems,
American Traffic Solutions (ATS),
ACS State & Local Solutions Inc (ACS).

Evaluation of Contractors and Contacts Included:

Contractor:

- Execution Date
- Amendments
- Competitive Procurement
- Term of Contract - Extensions

Costs:

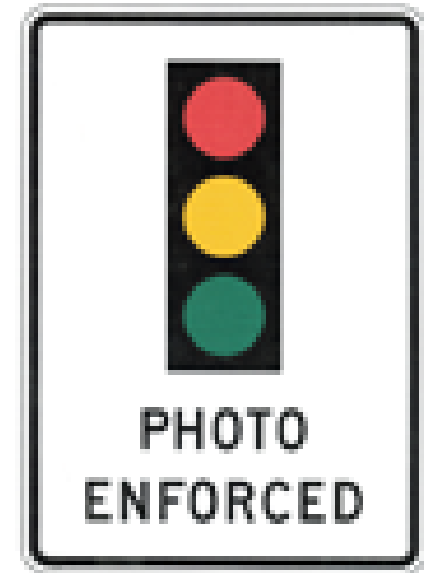
- Fee Per Camera / Extra Fees / Revenue Neutral
- Favored Nation Clause
- Contractor Support Staff
- Public Education Program
- Warning Notices Period
- Termination Clauses

Technical:

- Number of Lanes
- Non-Intrusive Connections
- Days to be Operational
- Number of Intersections / Cameras
- Maintenance Response

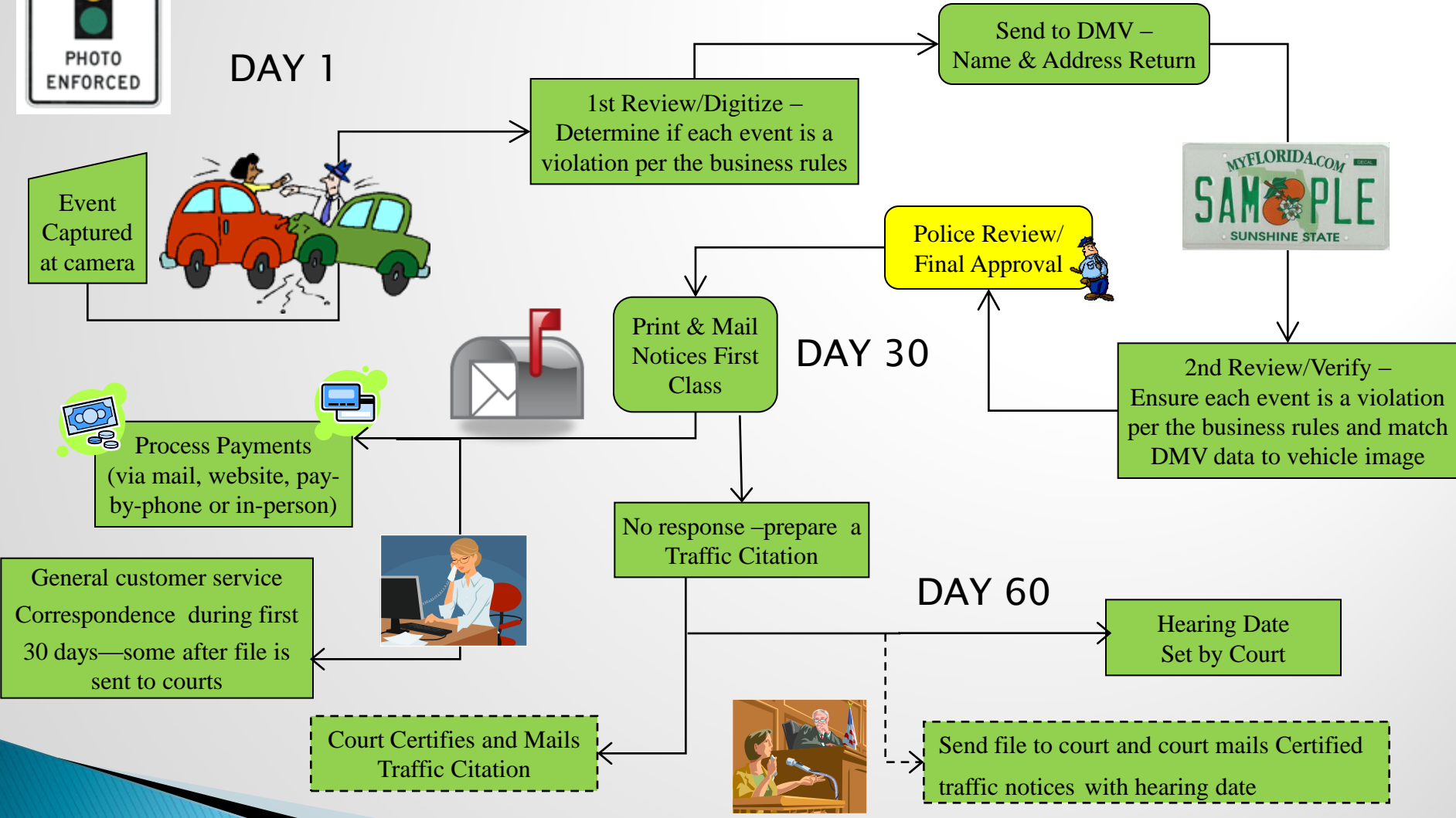
Processing:

- Review of Violations Process / Duration
- Payment Frequency





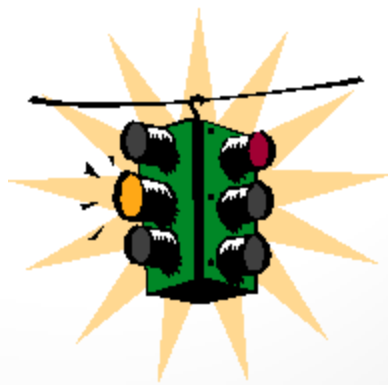
Legislative Red Light Camera Operational Processing Flowchart



Making Intersections Safer:

According to the Federal Highway Administration –
A Red Light Program will:

- ✓ Severely reduce red light running.
- ✓ Reduce crashes, injuries & fatalities.
- ✓ Reduce severe angle crashes.
- ✓ Leads to safer driving habits
- ✓ Reduce health care costs
- ✓ Increase police officer and public safety
- ✓ Save lives



According to the Federal Highway Administration –

A Red Light Program is the next logical step to address public safety

Administration recommends that an implemented program should:

- Include provisions with a contractor that coincides with the Mark Wendell Safety Act.
- Require flexibility in the length of contact, so the City could opt-out at any time after the first year, without penalty.
- Be guaranteed cost neutral, with no additional fees or charges for processing or certified mail and that no unpaid balance to be carried over month to month.
- That in the event the contractor executes a more favorable contract with another public agency, we would be given the same benefits.
- Support with comprehensive Public Education provided throughout the term of the program at no cost to the City, in order to educate motorists and help reduce red-light violations.
- Be flexible in the number of cameras included, with the ability to add, relocate or remove any installations as deemed necessary without charge or penalty.
- That any contractor selected to provide services for a program is experienced in processing violations with the Pinellas County legal system and the Clerk of the Court.



An Intersection Public Safety Program -

Including :

www.stpete.org/stoponred

