



Data Driven Approaches to Crime and Traffic Safety Longview, TX Police Department Agency Evaluation and Future Planning Recommendations



Date of Evaluation: March to April 2019

Agency: Longview, Texas

Workshop Attended: Longview, Texas April 18, 2017

Date of DDACTS Implementation: October 1, 2017

Agency Demographic and Background:

Longview is a city in Gregg and Harrison counties located in east Texas. Longview is considered a major hub city for East Texas and nearby to the city of Tyler. Longview was ranked 6th fastest growing small city in the United States.

Jurisdiction Demographics as of 2017

Population: 82,000
Area: 55 square miles
Median income: \$43,767

Agency Staffing as of 2019:

Sworn Staff: 175
Civilian: 62

Methodology:

The information gathered in this report was done so through multiple sources:

- Longview DDACTS Post Report Workshop.
- Phone and email interviews were conducted with Longview Analyst Jadonna Manion.
- A remote connection to Longview's crime analysis database was established by IADLEST analytical specialist who tested the data validation.
- Crime Analyst from the City of Longview, Jadonna Manion, provided maps and statistics used for this report.
- A survey of ninety-seven (97) personnel to include Upper Command, First Line Supervisors, Lieutenants, Patrol/Traffic, Civilians, Investigative or Specialized Units and Communications.

Workshop Results:

The initial agency workshop included a great cross-section of the agency with thirty-three in attendance including command staff, analyst, traffic unit, information technology and patrol. The Assistant Chief indicated to be very supportive of the training and the model as well as the agency as a whole.

During the workshop DDACTS SME's noted the Longview Police Department had all necessary resources to implement the DDACTS philosophy. The analyst SME identified that Longview's data collection process and

ability to extract such crimes and crashes was effective and user friendly. Longview demonstrated to have the expertise and necessary skills needed for data extraction purposes. In addition IT personnel were able to assist with making accessible the spatial analytics tool needed for heat maps within ArcGIS. With a focused and structured operational plan and by taking advantage of the various support and analyst training offered through sources such as IADLEST, Longview Police Department was determined to be in a strong position to succeed with DDACTS implementation. Key personnel within the department demonstrated to be eager to contribute to decreasing social harms in Longview using a DDACTS approach.

Longview Analyst and supportive agency personnel with the guidance of TxDOT Analyst SME were able to obtain traffic crash, crime and current traffic enforcement data that was identified as major concerns for Longview Police Department. The team was able to develop identified DDACTS locations using Longview's data in ArcGIS and show the results to the agency.

During the technical assistance portion of the workshop, the SME analyst and the Longview team were able to:

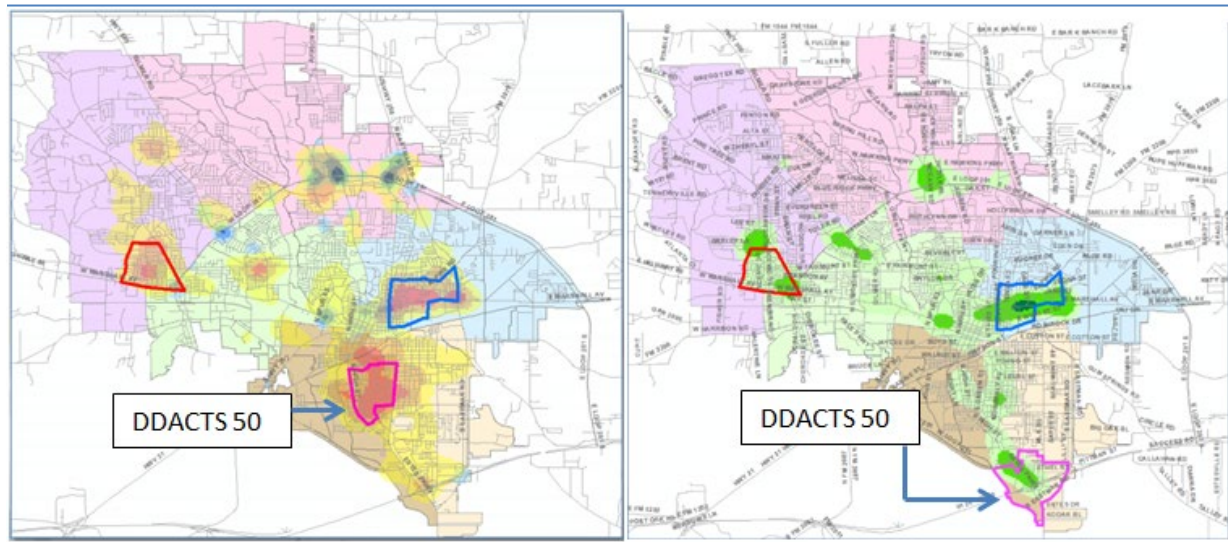
1. Established a method to extract identified social harms to include focus crimes and crashes,
2. Analyzed three years of historical crime and crash data,
3. Conducted hot spot analysis resulting in a historical heat map of focus crimes identified by Longview,
4. Conducted hot spot analysis resulting in a historical heat map of reported crashes,
5. Identified three potential DDACTS zones based on historical crime/crash data and illustrated in a map,
6. Collaborated with Longview team to establish an actionable DDACTS implementation plan,
7. Designed an evaluation technique that considered statistical significance and evaluation best practices

Activity since Workshop:

Since the conclusion of the April 2017 agency workshop, Longview Police Department has made great strides in further developing their analysis techniques regarding DDACTS enforcement monitoring and evaluation methodologies. Post DDACTS training Longview has implemented a variety of enforcement techniques that focus within DDACTS locations and are supportive of a data-driven approach. The workshop proved to be, among other things, a catalyst of sorts, for igniting action towards a larger plan. Over the past year and a half, Longview has taken the DDACTS philosophy and engulfed the following concepts within the dedicated timeline:

- **April 2017:**
Thirty-three (33) members of the Longview Police Department attended DDACTS training. Longview appointed a full-time analyst just prior to the scheduled workshop and proved to be a critical component to Longview's ability to adopt the DDACTS philosophy. A significant cross-section of Longview's department was represented including the traffic unit, analyst, IT, patrol and the Assistant Chief.
- **Post Workshop, but Prior to DDACTS Launch:**
 - Longview Analyst and Command Staff finalized social harms for targeted enforcement including crashes, homicide, assault (Non-Domestic), robbery, burglary and theft (excluding shoplifting). Heat maps were created based on historical data and three DDACTS zones were identified; One DDACTS zone was altered from the original workshop proposal.
 - Assistant Chief Boone presented briefing each patrol shift where DDACTS operations were covered along with objectives and expectations. DDACTS zones were illustrated and an emphasis on traffic stops and self-initiated calls was a focal point regarding enforcement efforts.
- **October 1, 2017:** Longview initiated its "Go-Live" regarding DDACTS implementation.
 - Longview Analyst regularly monitors enforcement activity on a monthly basis regarding traffic stops, on-view calls, on-view arrests and calls for service trends. Outcomes are also monitored including focus crime trends via RMS and Tracs for crash data. DDACTS enforcement and outcomes are provided and covered during routine CompStat meetings.
- **January 1, 2019:** Longview has continued monitoring, evaluating and making adjustments. As a part of Longview's adjustment component, a DDACTS location was changed due to changes in activity.

DDACTS 50- Location Adjustment



Pre and Post DDACTS Statistics:

Longview Police Department implemented their DDACTS operational plan in October 2017 in three (3) zones positioned throughout the city, each occupying a separate patrol area, with none sharing a border. Longview's DDACTS zones were identified using five (5) years of historical Uniformed Crime Report (UCR) Part I crime data to include homicides, non-domestic assaults, robberies, burglaries and thefts in addition to crash data extracted from Tracs.

Figures 1 through 4 represent heat maps of crashes, focus crimes, and enforcement activity completed during the April 2017 DDACTS workshop. Figure 1.1 and 1.2 represent 5 years' worth of crime and crash data that was extracted, spatially analyzed and represented via visual display; these two maps were used to identify, at first glance, potential DDACTS zones; illustrated in figure 1.3.

Figure 1.1 (Historical Crime Data)

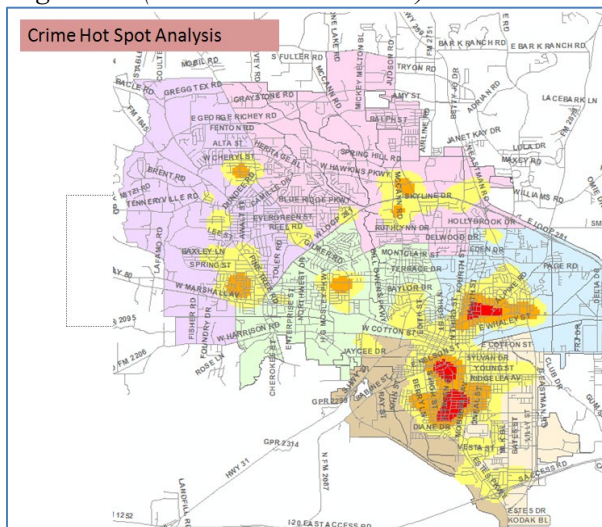
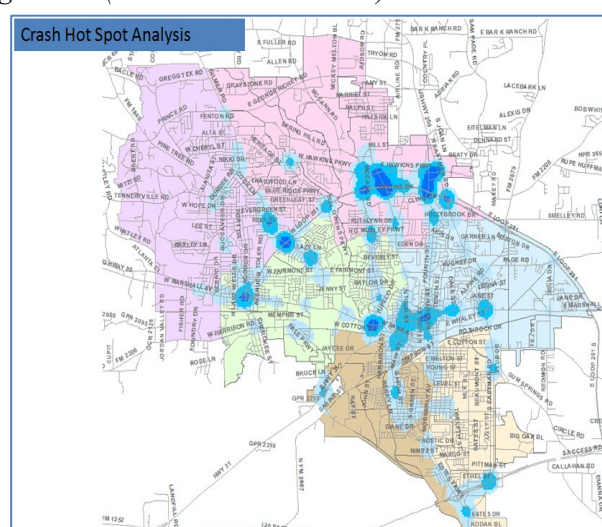
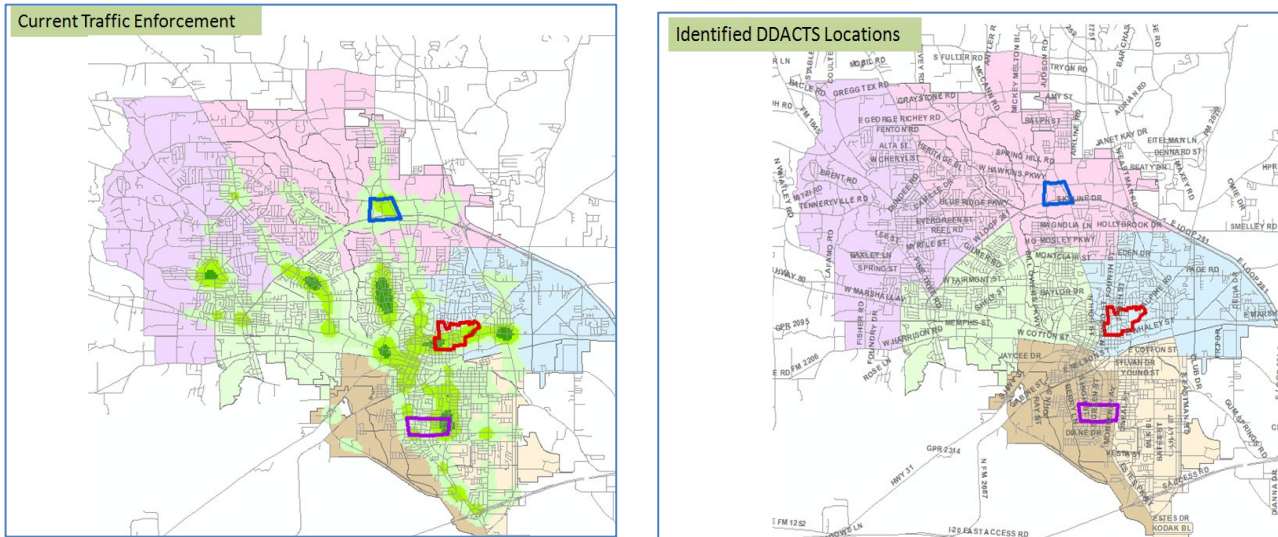


Figure 1.2 (Historical Crash Data)



A side by side comparison of the originally identified Longview DDACTS zones provided during the workshop, along with a map illustrating greater traffic enforcement attention was highlighted to Longview workshop attendees in an effort to begin the mindset of shifting resources based on a data-driven approach (See figure 1.3 & 1.4).

Figure 1.3 (First-Glance Potential DDACTS Zones) Figure 1.4 (Area of needed Concentrated Enforcement)

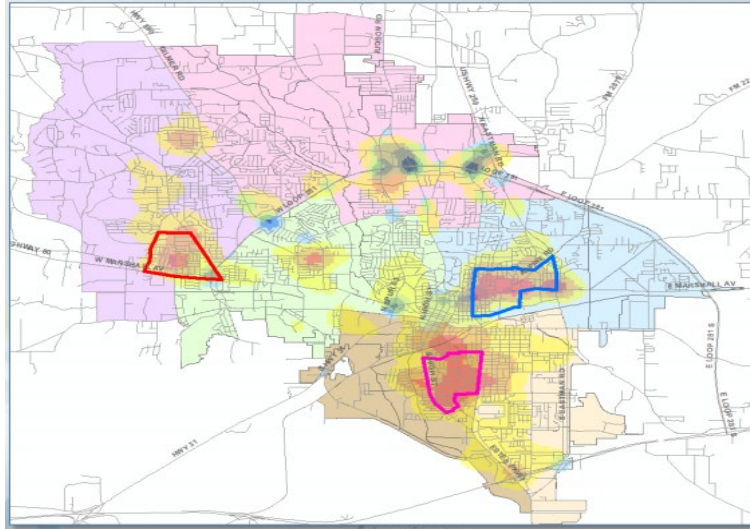


Longview Workshop Analysis Findings: Spatial analysis during the workshop in 2017 revealed the vast majority of Longview traffic enforcement activity took place outside of the areas that had a greater concentration of crime and crashes. The illustrations were the first time in which Longview had seen heat maps overlapped with enforcement activity. The concentration of high traffic enforcement areas was identified as STEP areas and with a mindset of “that’s always the way it’s been done” and high traffic enforcement areas were the known honey holes where officers could get there stops with ease.

The data analysis illustrated the vast majority of traffic enforcement took place far from areas where such enforcement would have the greatest impact on crashes and crime (DDACTS Zones). During the workshop the message was reinforced that Longview Police Department will have success if implementing a DDATS model, monitoring their enforcement efforts and ensuring contacts are occurring in the high crime and crash correct places.

Longview Initial Post Workshop Approach: Longview continued further diving into the analysis development post workshop and honing the objectives of the Police Department, along with support from data analysis, led to the identification and shared DDACTS zones targeted for enforcement activity. Figure 2.1 reveals Longview’s first DDACTS zones that were disseminated departmentwide with a directed approach of reallocating resources within targeted zones.

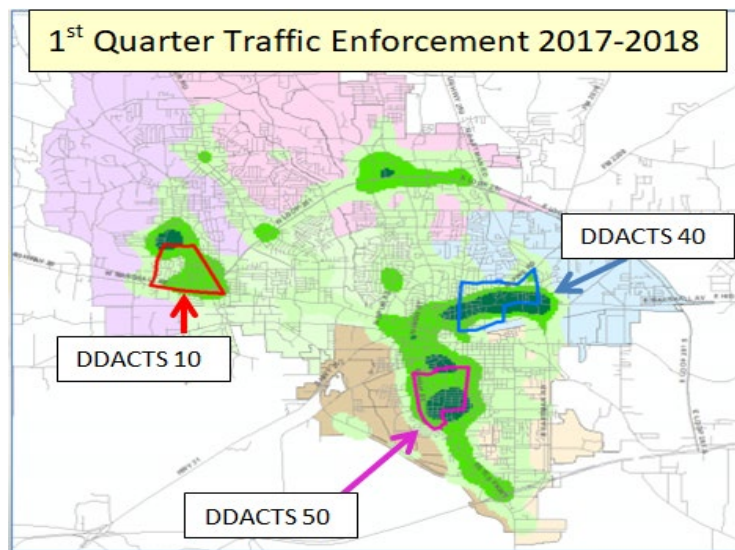
Figure 2.1 (First Approved DDACTS Zones)



Longview 1st Quarter DDACTS Implementation & Evaluation 2017-2018:

DDACTS Traffic Enforcement: Longview put emphasis on adjusting traffic enforcement within the targeted zones and the analysis completed by Longview's analyst showed a dramatic change in policing operations regarding traffic enforcement. Upon completion of three months of DDACTS enforcement a heat map of traffic enforcement was conducted in order to visually identify if resources were adapting to the focus areas. Figure 2.2 highlights Longview's success in traffic resource deployment within 3 months of DDACTS implementation.

Figure 2.2 (Traffic Enforcement after 3 Months of DDACTS Implementation)



It is generally the practice of many agencies to use twelve (12) month mark as an opportunity for the initial execution of Guiding Principle six (6): Monitoring, Evaluation and Adjustment. This case study will review these first twelve (12) months and make observations, recommendations and suggestions for the continued evolution and success of the DDACTS model.

As noted, Longview covered much ground in regard to redirecting traffic enforcement to the areas that were identified as benefiting the most from such activity. The findings from enforcement activity data illustrate a significant increase in the efficiency of resource deployment.

Longview's resource deployment reallocation efforts were evaluated following a years' time frame after implementation. Longview's crime analyst completed a comprehensive evaluation during the October – December 2018 time period. The results illustrate a positive correlation with resource deployment in DDACTS zones in relation to enforcement outputs and outcomes. Each DDACTS zone is independently evaluated following a valid evaluation methodology. The IADLEST Analytical Specialist validated a seven-point data spot check with each resulting in 100% accuracy of the reported statistics provided below.

DDACTS Locations 10, 40 and 50

- DDACTS 10: The October – December 2018 Quarterly DDACTS outputs and outcomes reveal a 98% increase of On View calls while traffic stops remained constant compared to a four-year baseline. A statistically significant reduction of 57% (8/19) was observed for DDACTS focus crimes during the quarterly DDACTS implementation and a 9% reduction in traffic crashes.
- DDACTS 40: The October – December 2018 Quarterly DDACTS outputs and outcomes reveal traffic stops and On-View calls remained within the normal range, however, DDACTS 40 still observed a 57% (15/35) reduction in DDACTS focus crimes. One assumption for the possible reduction may be the result of increased patrol saturation.
- DDACTS 50: The October – December 2018 Quarterly DDACTS outputs and outcomes similarly reveal the findings observed with DDACTS 40 with traffic stops and On-View calls remaining within the normal range and a 53% (13/28) reduction in DDACTS focus crimes.

DDACTS 10 (October – December 2018 Evaluation)

DDACTS 10														
	2014 (OCTOBER- DECEMBER)	2015 (OCTOBER- DECEMBER)	2016 (OCTOBER- DECEMBER)	2017 (OCTOBER- DECEMBER)	AVERAGE	STANDARD DEVIATION	NORMAL RANGE		2018-2019 1ST QUARTER (OCTOBER-DECEMBER)					
									OCTOBER	NOVEMBER	DECEMBER	1ST QTR TOTALS	% Change from Average	Z Score
DDACTS FOCUS CRIMES	15	34	11	14	19	9	10-28		5	0	3	8	-57%	-1.22
DDACTS TRACKING CRIMES	11	29	6	11	14	9	5-23		2	0	3	5	-65%	-1
CALLS FOR SERVICE	412	549	463	521	486	53	433-539		158	119	143	420	-14%	-1.25
TRAFFIC STOPS	197	182	243	312	234	51	183-285		73	95	60	228	-2%	NORMAL RANGE
ON VIEW	88	160	223	322	198	86	112-284		166	110	116	392	98%	+2.26
CRASHES	11	25	18	16	18	5	13-23		8	4	4	16	-9%	NORMAL RANGE
ON VIEW ARRESTS	11	21	47	60	35	20	15-55		18	12	11	41	18%	NORMAL RANGE

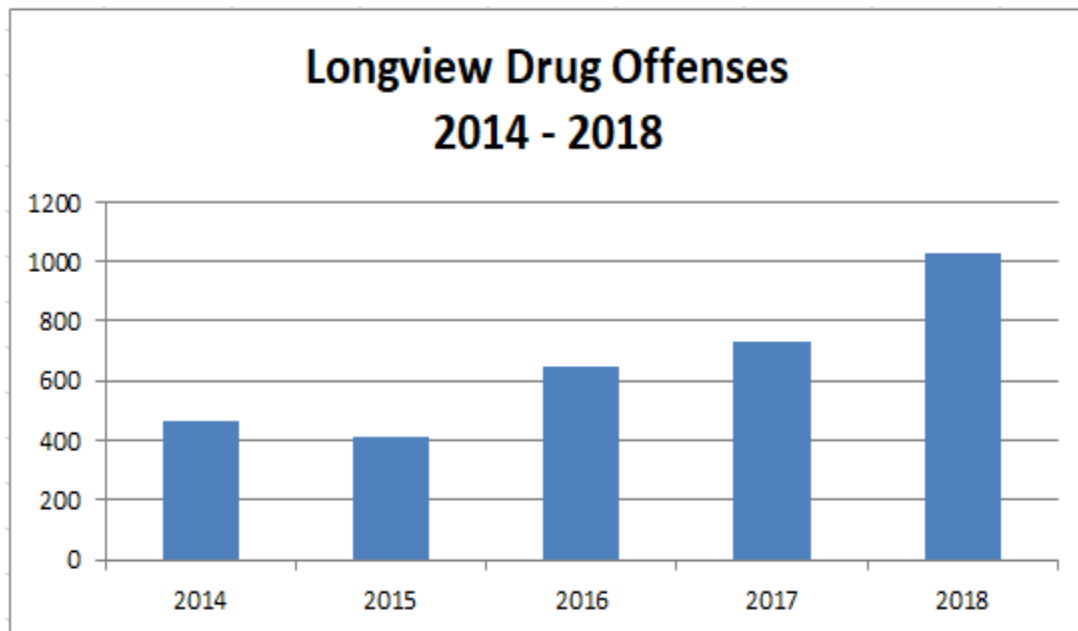
DDACTS 40 (October – December 2018 Evaluation)

DDACTS 40														
	2014 (OCTOBER- DECEMBER)	2015 (OCTOBER- DECEMBER)	2016 (OCTOBER- DECEMBER)	2017 (OCTOBER- DECEMBER)	AVERAGE	STANDARD DEVIATION	NORMAL RANGE		2018-2019 1ST QUARTER (OCTOBER-DECEMBER)					
									OCTOBER	NOVEMBER	DECEMBER	1ST QTR TOTALS	% Change from Average	Z Score
DDACTS FOCUS CRIMES	34	44	44	19	35	10	25-45		6	4	5	15	-57%	-2
DDACTS TRACKING CRIMES	18	34	36	11	25	11	14-36		4	3	4	11	-56%	-1.27
CALLS FOR SERVICE	771	876	850	737	809	57	752-866		278	197	231	706	-13%	-1.81
TRAFFIC STOPS	396	230	276	589	373	139	234-512		78	107	119	304	-18%	NORMAL RANGE
ON VIEW	417	501	726	843	622	171	451-793		153	147	158	458	-26%	NORMAL RANGE
CRASHES	18	14	17	18	17	2	15-19		6	6	7	19	13%	NORMAL RANGE
ON VIEW ARRESTS	61	54	66	90	68	14	54-82		21	17	20	58	-14%	NORMAL RANGE

DDACTS 50 (October – December 2018 Eval Evaluation)

DDACTS 50														
	2014 (OCTOBER- DECEMBER)	2015 (OCTOBER- DECEMBER)	2016 (OCTOBER- DECEMBER)	2017 (OCTOBER- DECEMBER)	AVERAGE	STANDARD DEVIATION	NORMAL RANGE		2018-2019 1ST QUARTER (OCTOBER-DECEMBER)					
									OCTOBER	NOVEMBER	DECEMBER	4TH QTR TOTALS	% Change from Average	Z Score
DDACTS FOCUS CRIMES	27	30	34	19	28	6	22-34		3	6	4	13	-53%	-2.5
DDACTS TRACKING CRIMES	20	21	23	11	19	5	14-24		2	3	3	8	-57%	-2.2
CALLS FOR SERVICE	632	604	641	593	618	20	598-638		166	152	189	507	-18%	-5.55
TRAFFIC STOPS	337	140	318	552	337	146	191-483		89	99	67	255	-24%	NORMAL RANGE
ON VIEW	152	141	220	557	268	170	98-438		91	74	67	232	-13%	NORMAL RANGE
CRASHES	27	27	15	17	22	6	16-28		5	4	12	21	-2%	NORMAL RANGE
ON VIEW ARRESTS	15	18	48	38	30	14	16-44		11	9	10	30	0%	NORMAL RANGE

A more focused examination of outcomes of on Longview's efforts revealed one very positive outcome relating to drug offenses. The review found drug offenses statistically increased during the agency's DDACTS operational period. The results of the analysis, reflected in the below chart, when compared with other agencies that have implemented the DDACTS model, is likely the result of increased proactive enforcement in identified DDACTS locations.



Evaluation Recommendations and Suggestions:

Longview's evaluations have been top level in regard to incorporating baselines using multi-year averages, statistical significance and frequency in its DDACTS monitoring efforts. Recommended evaluation procedures include:

- Compare outcomes of DDACTS locations to areas outside of the targeted Zones. The findings will help determine how significant changes occurring within DDACTS zones reflect upon overall city trends. Occasionally agencies implement a DDACTS approach and observe no change in focus crimes or crashes but after comparing DDACTS zones to city trends they notice the efforts prevented upward trends observed throughout the jurisdiction which should be identified as a potential success.
- Continue to monitor DDACTS enforcement activity monthly and complete quarterly evaluations.
- Once a year re-run historical data and identify if DDACTS zones need to be adjusted to ensure resource deployment is supported through a data-driven approach.
- Explore creating a unit specific DDACTS enforcement report that captures outputs from each actively involved unit (Patrol, Detectives, Drug Unit...etc.).
- A challenging recommendation, but useful for evaluation purposes, includes monitoring patrol saturation. This is often completed through capturing Automatic Vehicle Locator (AVL) data from patrol cars or body worn cameras. Other methods include more of a written format where officer's log in the time spent during a DDACTS detail.

Agency Survey Overview:

To gain an understanding of how Longview's police officers and civilian personnel understood the DDACTS implementation plan set forth by the department, staff conducted a brief survey that was provided to all two-hundred and nine (209) agency personnel to include Command Staff, First Line Supervisors, Lieutenants, Patrol

Unit, Traffic Unit, Civilians, Investigative Unit and Communications. To the agency's credit, the survey had a high rate of return with ninety-seven (97) participants completing a 16-question anonymous online survey. The survey questions are outlined below:

- 1) Role within Agency?
- 2) How did you learn about the DDACTS model? (check all that apply)
- 3) When did your department implement the DDACTS operational plan?
- 4) The culture of the agency is to use data-driven strategies.
- 5) DDACTS has changed how your agency expects officers to patrol, or how you patrol personally, when not responding to a call for service?
- 6) To what extent did you have input into what strategies and tactics are employed in the DDACTS target area and times?
- 7) How did your department deploy upon initial implementation of DDACTS? (check all that apply)
- 8) I have a clear understanding of what activities I should perform while in the DDACTS zone.
- 9) How many hours per week do you spend in a DDACTS zone?
- 10) How does your agency track/record self-initiated and other activity in the DDACTS zones? (check all that apply)
- 11) How clear do you feel the agency goals of the DDACTS operational plan were explained? (i.e. reduce crashes, reduce crimes, reduce social harms, etc.)
- 12) Based on your experiences so far, how effective has the DDACTS operational plan been? (check all that apply)
- 13) How often have you received actionable analysis/feedback regarding the DDACTS zones?
- 14) What challenges did your agency have with implementing its DDACTS plan? (check all that apply)
- 15) How were those obstacles overcome? If not overcome yet, how do you propose your department works to overcome them? Specifics would be helpful.
- 16) What improvements would you like to see moving forward with your agency's implementation of DDACTS? How do you think it can be more effective and efficient? Specifics would be helpful.

The survey questions were designed to collect critical information across Longview Police Department and to use that information to further guide Longview on a successful DDACTS implementation approach.

Survey Highlights:

- Upper Command, First Line Supervisors and Lieutenants revealed a higher percentage of survey participation ranging from 84% - 100% participation. Longview Investigative Unit provided a low 21% survey participation and the civilian Communications Division was the lowest at 13% participation.
- Roughly 4/5 of survey participants received formal DDACTS training, leaving 20% without formal training.
- Over 80% of respondents agree or strongly agree that the culture of the agency is to use data-driven strategies.
- Over 83% of respondents agree or strongly agree that DDACTS has changed how the agency expects officers to patrol. Notably, 20% (10) of officers who responded were neutral regarding whether DDACTS has changed how the agency expects officers to patrol when not responding to a call for service.
- Most respondents reported the initial implementation of DDACTS involved multiple units supporting a holistic operational plan.
- 76% of respondents had a very clear or extremely clear understanding of what activities should be performed in the DDACTS zone. Approximately a quarter of respondents did not. Of note, most respondents who were somewhat to not clear were officers or Investigative or Other Special Units.
- Almost all respondents reported spending anywhere from one hour to four hours in the DDACTS zone per week.
- 78% of respondents felt the DDACTS operational goals were explained very clearly or extremely clearly.

- Most respondents believed the DDACTS operational plan has been effective in reducing social harms/crimes (82%), reducing crashes (27%), creating stronger community interactions and connections, and created cost savings. 12% reported that DDACTS provided little to no value.
- Respondents mostly receive actionable analysis/feedback regarding the DDACTS zones quarterly (58%), monthly (34%), and yearly (4%). 4% of respondents have never received analysis/feedback.
- 51% of respondents indicated that officer buy-in was a challenge with implementing the DDACTS plans. 21% reported that supervisor buy-in was a challenge. Of note, officer buy-in, supervisory buy-in, and lack of impact feedback were reported across all staff members (patrol, line supervisors, civilians, etc.) to be a major challenge. Staff who reported communicating the goals as a challenge were mostly patrol and civilian staff.
- Several survey participants requested additional communication to overcome challenges including buy-in.

The results of the survey are integrated into the following section regarding Longview recommendations moving forward. For more detail refer to the full Longview Police Department *DDACTS Post-Implementation Evaluation Survey Report*.

Longview Recommendations Moving Forward:

The following recommendations will continue to support the growth of the DDACTS operational model in Longview to ultimately best serve its community.

Data and Analysis Recommendations

1. Review the evaluation recommendations provided in this report to further assist with developing a further understanding of observed findings.
2. Consider including identified top offenders who are known to be active within the DDACTS locations as part of Longview's DDACTS report. The intelligence can serve as officer awareness or if more actionable probable cause exists will warrant a stop/field interview contact.
3. It is recommended for the agency to develop a mechanism in which to track amount of time being spent in the DDACTS areas whether through a CAD incident, GPS in the vehicles, or some other means. This will allow for a more direct correlation to be made of the nexus between the efforts put forth and the outcomes experienced in the area.
4. Consider creating a DDACTS report template and request feedback from patrol, supervisors and commanders in order to meet the needs of all levels and most importantly to create an actionable product. Several such templates are available from other agencies and can be provided for consideration if so desired.
5. Consider continuing making the most of the opportunity for remote analytical/technical assistance offered as part of the project, which can provide your agency with a variety of assistance.

Training/Review Processes Recommendations

6. Consider conducting additional in-service training for all personnel covering what the DDACTS model is and how the agency is implementing it. If the same person(s) presents the training, it will ensure a consistent agency wide message to be delivered. IT will also allow for a face to face update of the agency's efforts to date.

Implementation Recommendations

7. It is important to remember the DDACTS model success depends greatly on the deterrent effect of high visibility patrol in a given area. Therefore, consider having non-uniform personnel utilize marked patrol vehicles while working within the DDACTS areas, at least part of the time.
8. As a way of increasing the level of activity in the DDACTS areas, consider expanding the involvement of DDACTS enforcement from varying units within Longview Police Department.
9. Consider placing further emphasis on including additional partners and stakeholders in the Longview DDACTS operational plan. Examples include Parole, Probation, Code Enforcement, City Engineering...etc. Keeping in mind DDACTS is a holistic approach and should not rest solely on Law Enforcement.
10. Continue to resist the tendency to move the established DDACTS areas around the city to address your emerging “hot spots”. With the number of crimes/calls for service the agency has in a given year, Longview should consider working the newly established DDACTS area for at least a year barring a re-examination of the data that would suggest the historically disproportionate amount of crime and crashes are in fact occurring elsewhere.
11. Consider developing a plan to improve unit buy-in regarding DDACTS implementation. One method to increase the rapport can be requesting feedback from officers as to their thoughts and or experiences within the DDACTS areas. Therefore, it is encouraged that the analyst or Lieutenant assigned to this function develops a mechanism for effective communication, such as to periodically attend patrol briefings, to facilitate quick identification and resolution of issues.

Closing

The analysis conducted within this case study is an illustration of the continuing efforts being put forward by the Longview Police Department. Longview’s successes in this early stage of DDACTS implementation should serve to demonstrate the importance of using data to determine the best position to place police resources in order to have the greatest impact on both crime and crashes. Longview should look forward to continuing and increasing success as it makes the necessary adjustment to its implementation.

IADLEST stands prepared to assist the Longview Police Department to the greatest extent possible in any one of number of ways and such the agency is strongly encouraged to reach out should there be any questions/issues for which it could help, i.e. analytical support, operational questions, etc.