

# City of Franklin Fire Department

February 2007

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## FIVE YEAR STRATEGIC PLAN



City of Franklin Fire Department  
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This committee would like to thank the following people for helping obtain information needed to produce the following document.

Mayor Jones-Matthews  
Clerk/Treasurer Alexander  
Police Chief Borges  
Fire Chief Reese  
Deputy Fire Chief Nelson  
Planning Department Head Csikos  
Fire Secretary Rhoades  
Franklin Township Trustee Campbell

The Franklin Fire Department uses an all hazards approach to protect and serve the City of Franklin as well as parts of Franklin Township. Aside from fire suppression, firefighters are also asked to perform a multitude of other valuable services: EMS (ALS Transporting Ambulances), public assists, motor vehicle accidents, public education, code enforcement, plan review, water rescue, hazardous materials response and other technical rescues.

The mission of the Franklin Fire Department is to provide the above mentioned services to the best of its ability with resources provided. The intention of this document is to inform the reader of the existing needs of the Department as well as foreseeable future needs.

Franklin Fire Department is a 46 merit personnel department (including administration) that operates out of 2 fire stations. The responding apparatus includes 2 Ambulances, 2 Engines, 1 Quint, 1 Ladder, 1 Rescue Squad, 1 ALS Chase Unit and a Hazardous Materials Trailer. Shift Personnel operate on a 24/48 hour schedule with 212 hours in a 28 day period. Minimum staffing is 11 personnel per day working on each shift.

In 2000 the census recorded that there were 19,463 people residing in the City limits. The planning department in 2005 estimates 23,112 people residing in the City limits. This is an increase of 3,649 residents in the 5 year period or an 18.75% increase in population.

In 2000 the planning department shows 7,547 housing units compared to 8,958 housing units in 2005. For the 5 year period that is an increase of 1,411 housing units or an 18.70% increase in housing units. This does not take into account the possible housing increases in the new sections of Heritage sub-division or the "Hampton Springs" sub-division (400 units). This increase of housing units does not include the number of commercial units added which is 123 from 1998 to 2006 or the 742 acres annexed into the City. It is important to understand the Franklin Fire Department also covers the area of Franklin Township that is not in the city limits.

In 2000 the Franklin Fire Department responded on 1,057 calls compared to 2,133 calls in 2005. This is an increase of 1,076 calls or an increase of 101.80% in calls. This increase in call volume has coincided with an increase of fire department personnel of 3 new members in the 2002 budget.

This increase in population, acreage, housing units, and call volume has led to some pressing issues for the Fire Department. These issues include low overall staffing, low paramedic staffing, increased response times and decreased time available for training.

Response times are a key indicator for the effectiveness of firefighting and emergency medical care. It is important to consider not just actual driving times to a location, but one must also factor in several other aspects. For a fire response these include detection, notification, dispatch, assembly, travel and set-up. Assembly time is what might be referred to as “gearing up”, for which the State of Indiana sets 1 minute as the gold standard.

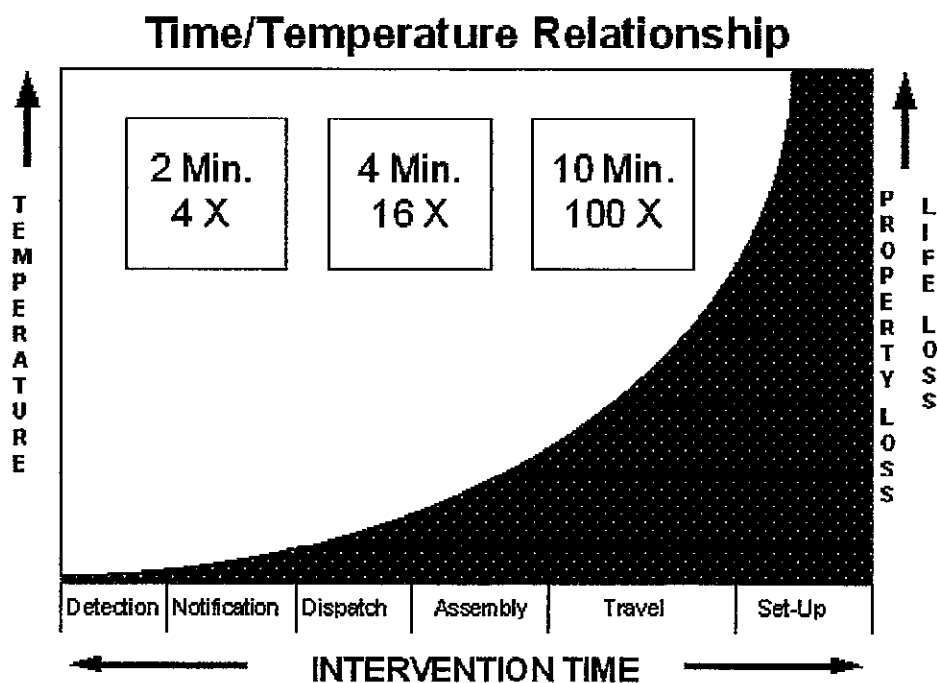


Figure 1: Time & Temperature Relationship to Life & Property Loss (Ref 9)

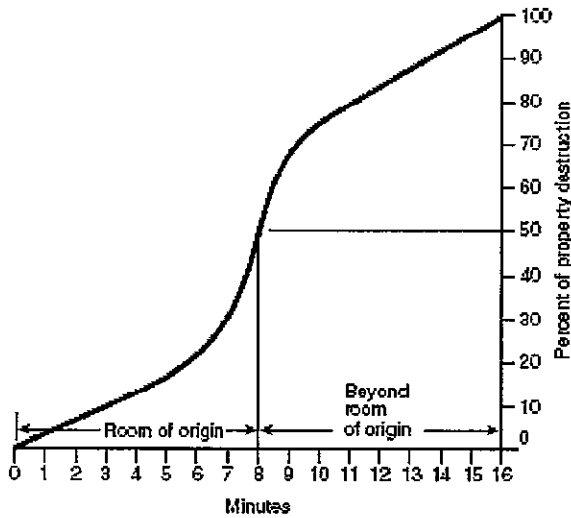


Figure 2: Fire Propagation Curve (Ref 6)

<b>Fire Extension in Residential Structures 1994–1998 (Rate per 1000 Fires)</b>			
<u>Extension</u>	<u>Civilian Deaths</u>	<u>Civilian Injuries</u>	<u>Dollar Loss Per Fire</u>
Confined to the room of origin	2.32	35.19	3,185
Beyond the room but confined to the floor of origin	19.68	96.86	22,720
Beyond the floor of origin	26.54	63.48	31,912

Note: Residential structures include dwellings, duplexes, manufactured homes (also called mobile homes), apartments, row housed, townhouses, hotels and motels, dormitories, and barracks.

It is of utmost importance that one understands that a fire doubles in size every minute. This can be demonstrated by the video “Countdown to Disaster”. The Insurance Service Organization states that a built-upon city should have a first-due engine company within 1.5 miles and a ladder company within 2.5 miles. NFPA 1710 states there should be an engine company on scene in four minutes or less excluding one minute for turnout time.

One area that has a high response time is the Knollwood subdivision, with a total estimated response time of 11-13 minutes per fire. This is calculated by using a conservative figure of the start of the fire to dispatch of 2 minutes, 1 minute assembly time, 6-8 minute travel time and 1 minute set-up time. This is just for the personnel from Station #21 with an additional 2 minutes for the other half of the staff from Station #22.

It is generally recognized that 10 minutes after the start of a fire, the room of origin will reach flashover conditions. This is when the entire room reaches its ignition temperature and ignites at the same time. It is worthy to note that this is a leading cause of firefighter deaths on fire scenes.

Emergency medical responses also fall within very time sensitive guidelines. The American Heart Association sets forth the consensus standard that a person having a heart attack should have first responders with AED capabilities within 4 minutes and a Paramedic within 6 minutes. This same condition occurs when someone is having a stroke. For cardiac arrest victims the probability of regaining circulation decreases by 50% for every minute that passes. While there is no time guideline for people experiencing difficulty breathing, each minute for that person can feel like an eternity. NFPA 1710 states that for medical emergencies there should be a first responder on scene within 4 minutes and advanced life support on scene within 8 minutes.

To use the Knollwood subdivision again as an example, the average total response times fall within 8-10 minutes. This is a faster response than for fire runs due to the fact that personnel do not have to suit up in turnout gear and the EMS vehicles are more responsive.

The Knollwood subdivision accounted for 378 calls in 2005. That accounts for 17.72% of all runs for that year. One needs to remember this does not include other areas north on US 31 that experience long response times such as Pennington Mobile Home Park, Earlywood Drive, International Drive, Industrial Drive, Northpointe addition and Paul Hand Road (400 North).

The overall increase in call volume has led to numerous back to back calls, multiple calls at the same time and insufficient manpower responding to calls.

OSHA has mandated that prior to making entry there must be a back-up crew available; better known as the 2 in – 2 out Rule. There is also a provision that there will be an Incident Commander who has no auxiliary functions. This means per state law there must be at least 5 firefighters on a fire scene prior to making entry. NFPA 1710 states that there should be 4 members on each Engine, Ladder, and Quint responding to the scene. There

should also be 2 members on each Rescue Squad or Ambulance responding to the scene. NFPA 1710 also states that the overall numbers on the scene should be determined using the following factors.

- (1) Life hazard to the populace protected.
- (2) Provisions of safe and effective firefighting performance conditions for the firefighters.
- (3) Potential property loss.
- (4) Nature, configuration, hazards and internal protection of the properties involved.
- (5) Types of fireground tactics and evolutions employed as standard procedure, type of apparatus used, and results expected to be obtained at the fire scene.

Using these guidelines here are the expected functions on a fireground using a single story residence with only 1 room involved.

<u># of Members</u>	<u>Function</u>
1	Water supply
1	Incident Command
1	Pump Operator
2	Attack Line
2	Back-up Line
2	RIT (OSHA Mandate)
2	Ventilation
2	EMS/REHAB
2	Search/Rescue

This is a total of 15 members on a single story residence with only one room on fire. If the fire has extended past one room then an additional attack line with 2 personnel would be needed. In a 2-story residence an additional search team would be needed as well as a handline to protect the stairwell egress.

The number of personnel needed at a commercial fire or highly populated building (e.g. hospital) increases greatly.

The number of emergency medical calls has also increased in the last 5 years. Every scene needs to have a paramedic on the scene to evaluate the patient's condition and to possibly give medications. This has been increasingly harder as several paramedics have sought employment

elsewhere. At times this leaves only 1 paramedic working to cover the entire city during a 24 hour shift. This shortage of paramedics is exacerbated by the increasing frequency of multiple calls going on at one time. At this time there are only 8 paramedics employed by the fire department. Two shifts have 3 paramedics and the other shift has 2 paramedics.

Besides often having multiple calls at once, it takes an average of an hour for an emergency medical call. This means that while on a run, there may not be a paramedic available to give life saving medications to patients on other calls. The run time is greatly extended if the call is of such a serious nature that it needs surgical care. The time spent on fire scenes can run into multiple hours, which also leads to a shortage of paramedic care.

An often overlooked aspect of the call volume increase and manpower shortage is the decrease in training. To help increase the manpower on shift the Training Officer position has been left open and on shift personnel provide their own training. With the increased call volume this leaves few opportunities to allow for the preparation of materials or the actual implementation of training. This is most obvious when dealing with new personnel who have little to no formal training or education. Concentrating on training these new members takes time away from the drilling of personnel who have some time on the department. Repeated training and drilling of all personnel is one of the most important activities in a fire department.

The following is a list of training the Insurance Service Organization reviews:

- \*Half Day (3 Hour) drills, 8 per year
- \*Half Day multiple company drills, 4 per year
- \*Night drills (3 Hour), 2 per year
- \*Company level training, 20 hours per month per member
- \*2 Days (6 Hours each) per year for all officers
- \*4 Half Day Driver/Operator trainings
- \*40 Hours for new Driver/Operators
- \*1 Half Day of Hazmat per member
- \*240 Hours per recruit

A paramedic is also required to maintain an Advanced Cardiac Life Support, Pediatric Advanced Life Support and Pre-Hospital Trauma Life



Support certifications, which are each 2 day classes every 2 years. An hour long Audit and Review at Johnson Memorial Hospital is mandatory for each paramedic every month.

Over the next 5 years the City of Franklin is going to continue to grow and prosper. During this time frame we, as a community, need to respond in a proactive and responsible manner. While we may never be able to reach the lofty goals set forth by the national associations, we must use them as a benchmark. While moving forward in a responsible manner the city will benefit from increased protection and possibly an upgrade in the city's ISO classification, which would lower property insurance.

Here are the following recommendations presented by our committee:

- 1) Build a fire station with an attached training unit north on US 31 near Earlywood Drive to lower response times. This station to open mid-year 2008. Make upgrades to existing stations to make them more habitable. There is approximately \$2.3 million in the Cumulative Capitol D Fund for this new building and upgrades. This fund also replenishes at approximately \$330,000/year.
- 2) With possible growth East due to the Tech Park and growth South with Commerce Connector, start a study on location for fourth fire station.
- 3) Implement hiring plan as follows to provide safe, efficient coverage for all areas and to properly staff responding units. The schedule will also allow each new member to gain individual instruction before additional members are hired.
  - 2007 - 4 Members
  - 2008 - 4 Members
  - 2009 - 3 Members
  - 2010 - 3 Members
  - 2011 - 4 MembersBy 2011 this will allow 16 members to be on duty each shift as well as the Chief, Deputy Chief, Inspector and Training Officer. In 2011 the Planning Department expects the population to be 27,707.
- 4) Require all new members to attend a fire training academy prior to coming on shift. This will provide a solid educational foundation for the fire department to build upon. This means each new firefighter will obtain a FF I&II, EMT-B, and HAZMAT TECHNICIAN certification.

- 5) Require all new members to become a paramedic within 3 years of hire. This will assure the future success of the paramedic program.
- 6) As a stopgap measure, we recommend employing 2 part-time paramedics on 24 hours/day (12 Hour Shifts) at a pay rate of \$14.00/Hour until 8 new hires become certified paramedics. This should be a maximum of 4 years.

Our committee will gladly obtain copies of all documents or the video mentioned. We would also like to express our gratitude for taking your time to read this document.

## References

- 1) 2001 American Consulting Study
- 2) 2000 US Census
- 3) Planning Department Projection Document
- 4) ISO: Training and Distribution Of Companies
- 5) American Heart Association 2006 ACLS Guidelines
- 6) NFPA 1710 2004 Edition
- 7) City of Austin, Texas Vision: Comprehensive Planning
- 8) 2007 Franklin Police Budget Proposal
- 9) Ontario, Canada Comprehensive Fire Safety Effectiveness  
Model Considerations for Fire Protection and Prevention in your  
community
- 10) Countdown to Disaster
- 11) Fire Services Today “Reduced Staffing”: At What Cost,”
- 12) Fire Risk Analysis: A Systems Approach

## Appendix

### Table 1: Population Data

Figure 1: Population Trends 1900 - 2020

Figure 2: Population Trends 1995 - 2012

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Figure 12: Non-EMS Runs by Building Type

Figure 13: All Runs by District

Table 1: Population Data

<b>1900 - 2020 Population &amp; Housing Unit Data</b>		
Year	Population	Housing Units
1900	4005	No Data
1910	4502	
1920	4909	
1930	5682	
1940	6264	
1950	7316	
1960	9453	
1970	11477	
1980	11563	
1990	12907	
1991	13563	
1992	14218	
1993	14874	
1994	15529	
1995	16185	
1996	16841	
1997	17496	
1998	18152	
1999	18807	
2000	19463	7547
2001	20268	7856
2002	21071	8167
2003	21587	8367
2004	22384	8676
2005	23112	8958
2006	23610	9151
2007	24377	Projected
2008	25169	
2009	25987	
2010	26832	
2011	27704	
2012	28605	
2013	29534	
2014	30494	
2015	31486	
2016	32509	
2017	33566	
2018	34657	
2019	35783	
2020	36946	
1900 - 2000 Populations as Reported by the United States Census -- 2001 - 2020 as Estimated by the Department of Planning		

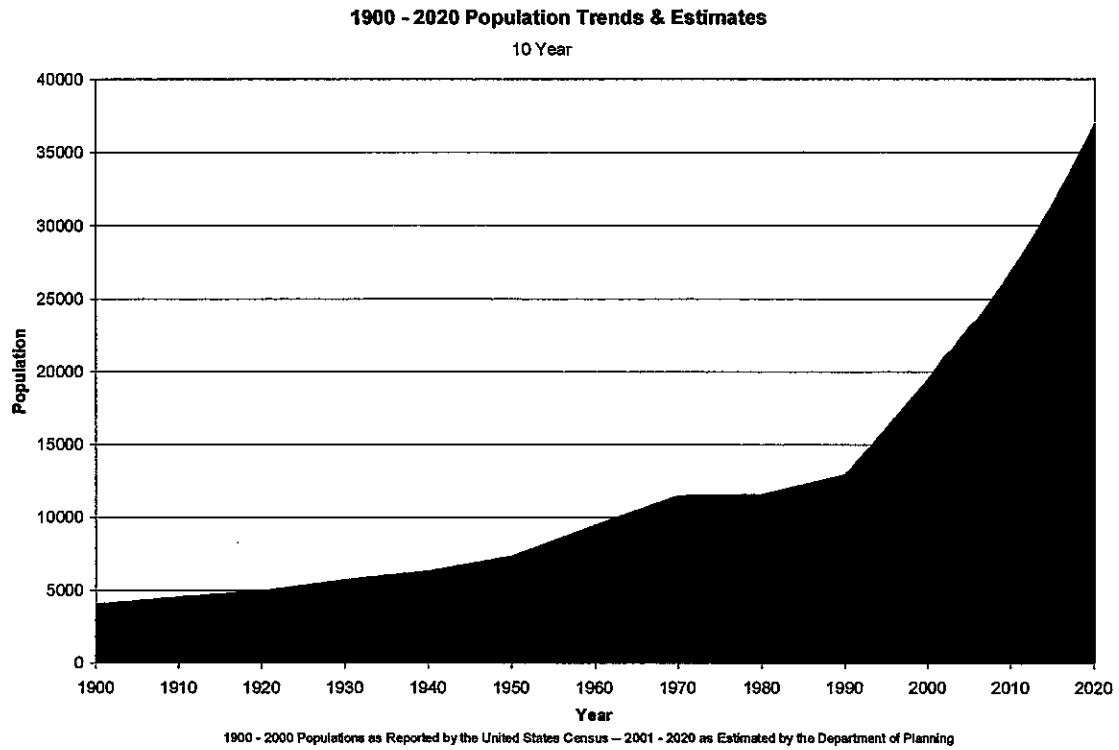


Figure 1: Population Trends 1900 - 2020

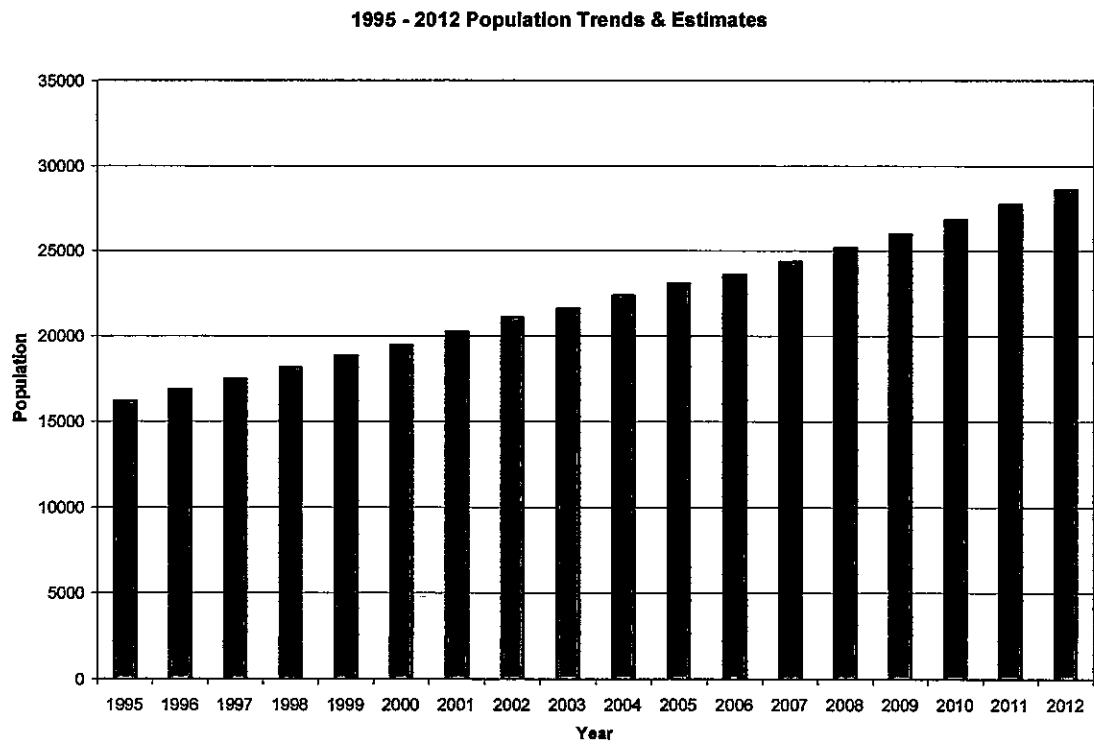


Figure 2: Population Trends 1995 - 2012

1995 - 2006 Housing Units

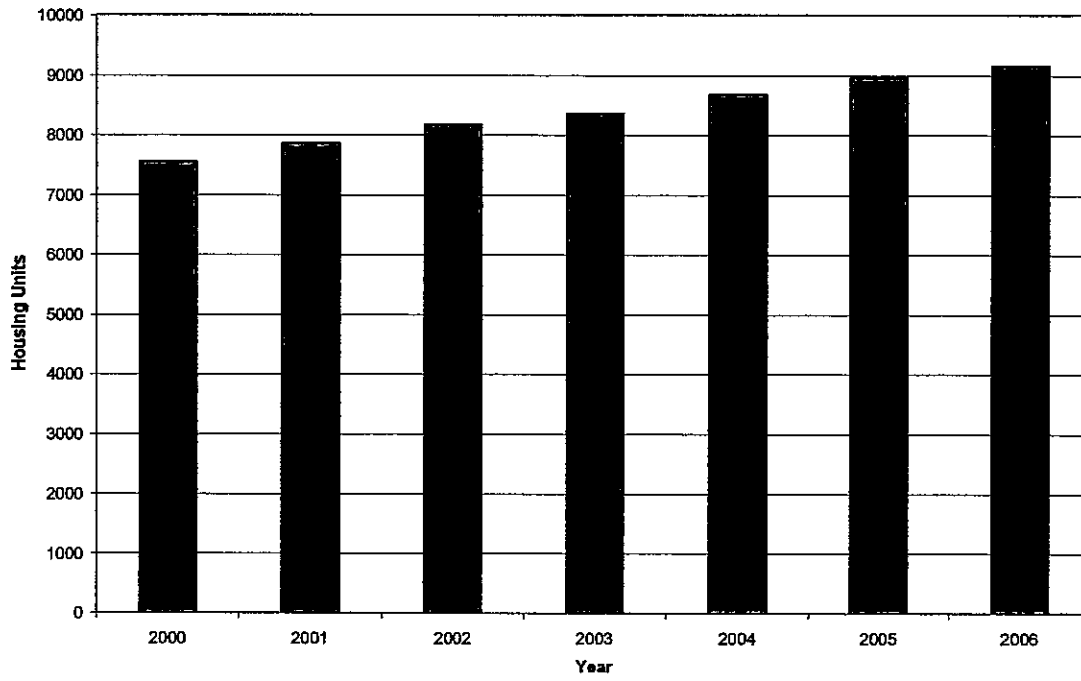


Figure 3: Housing Units 2000 - 2006

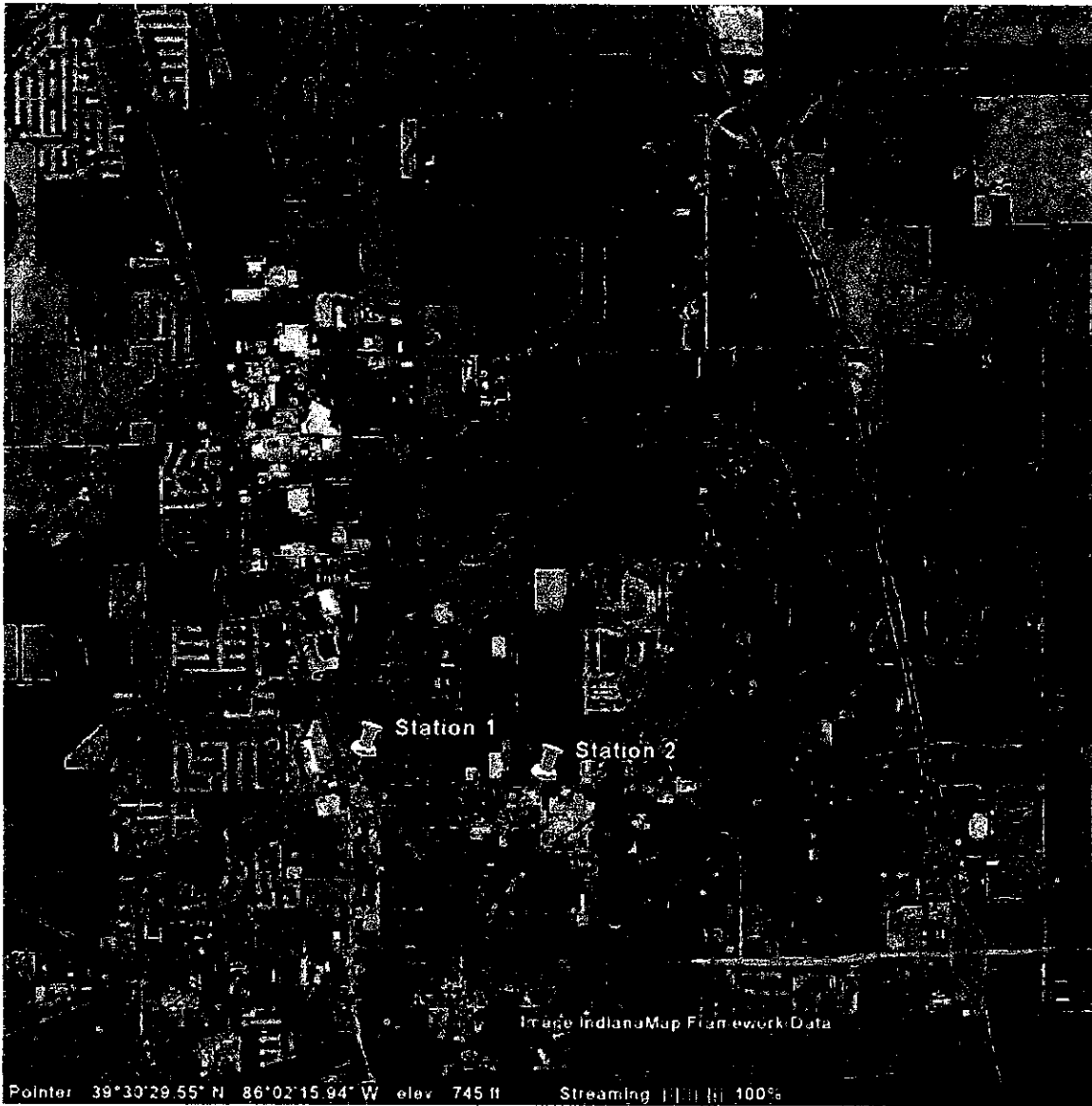


Figure 4: Map of Franklin with Current Stations

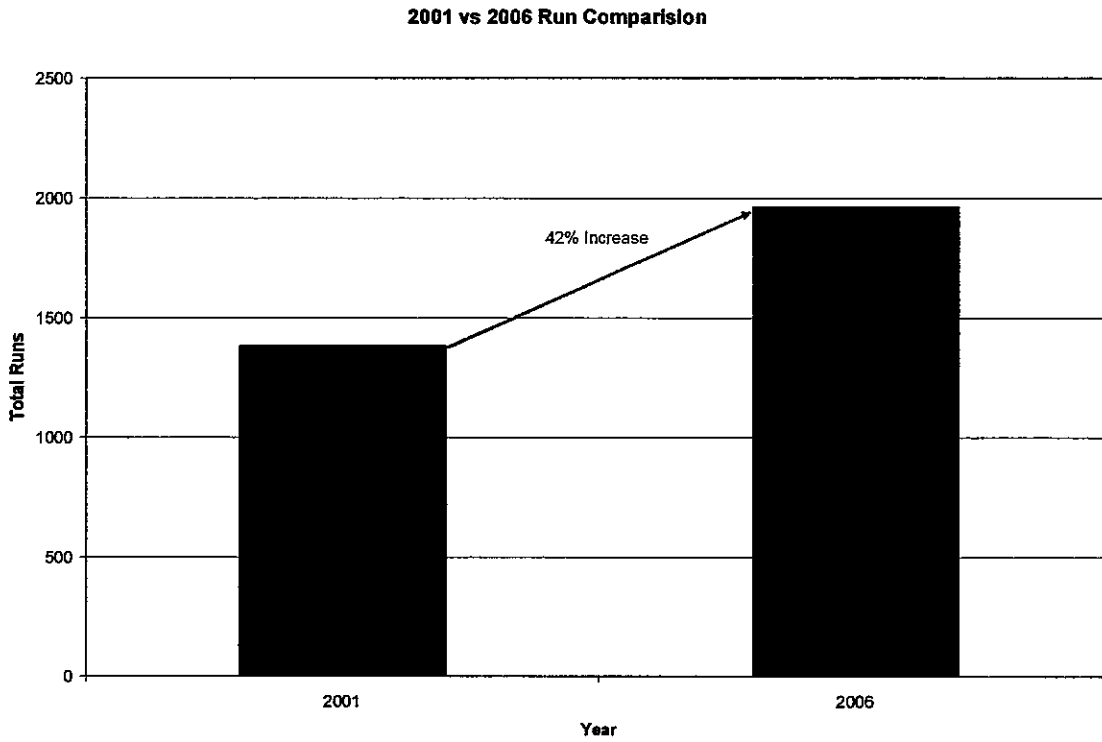


Figure 5: Run Volume 2001 vs. 2006

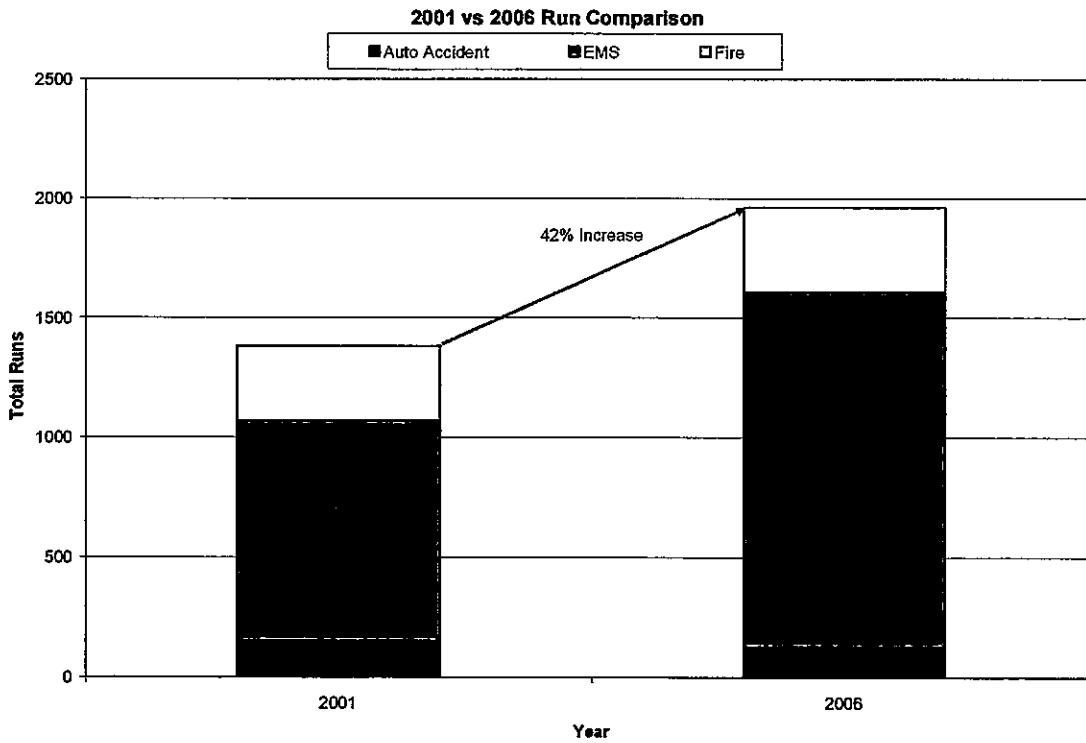


Figure 6: Run Volume 2001 vs. 2006 by Incident Type



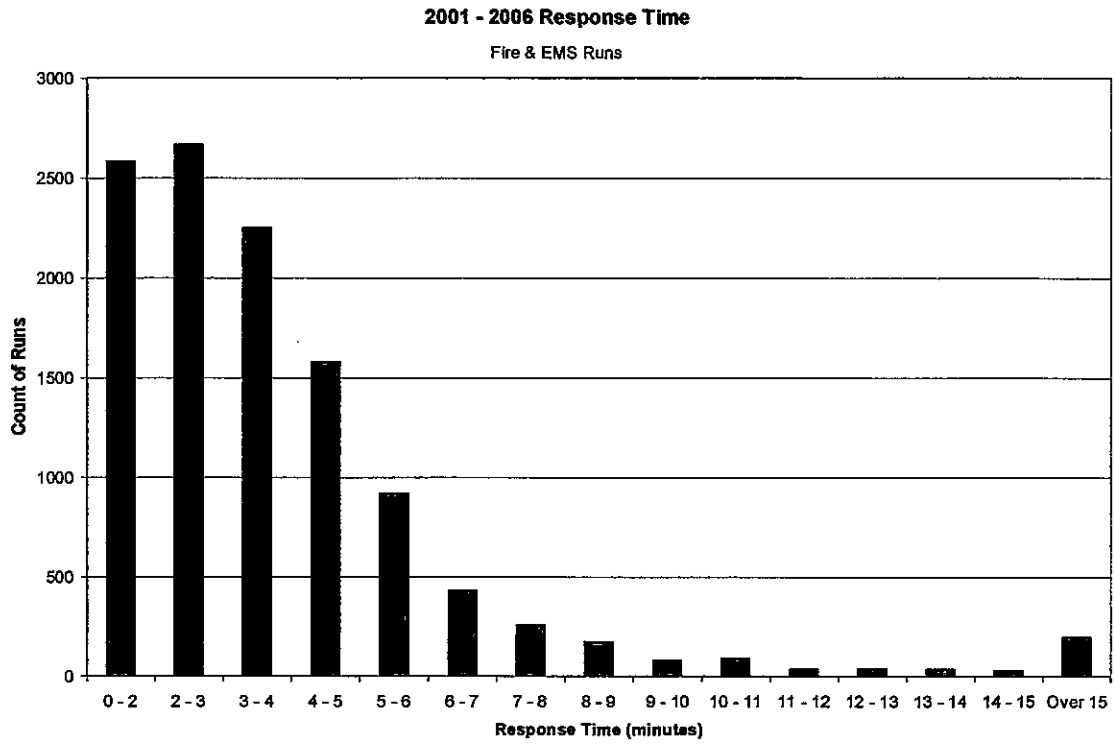


Figure 7: Response Time 2001 – 2006

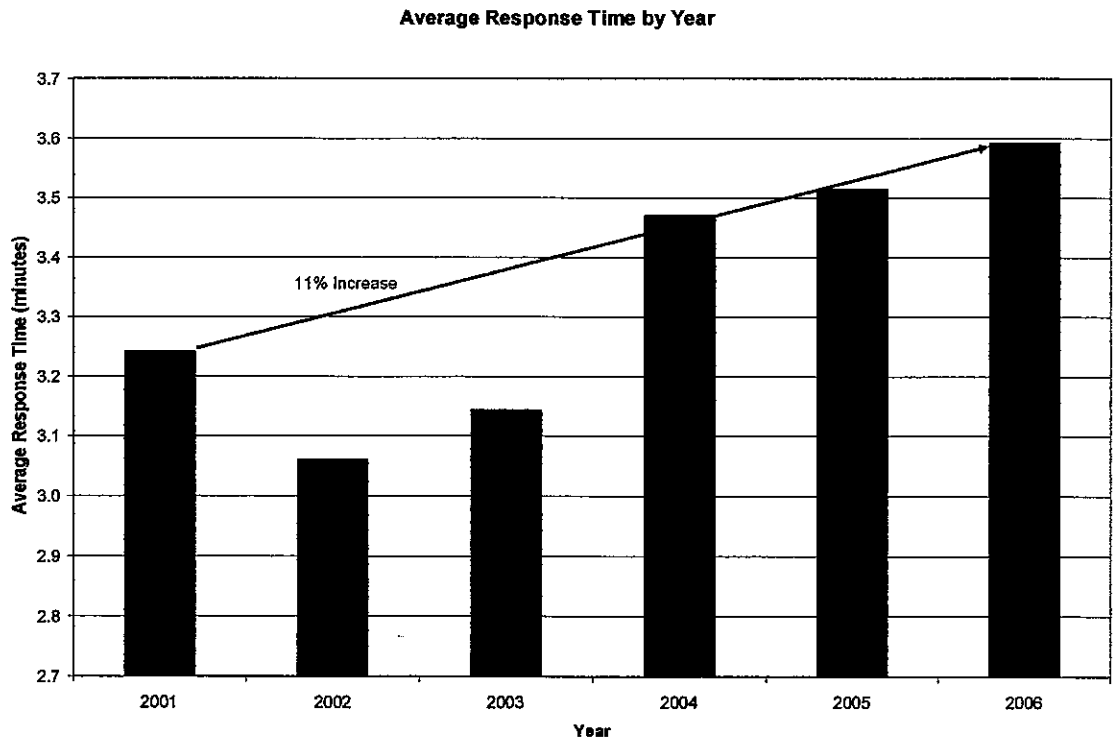


Figure 8: Response Time Averages 2001 - 2006

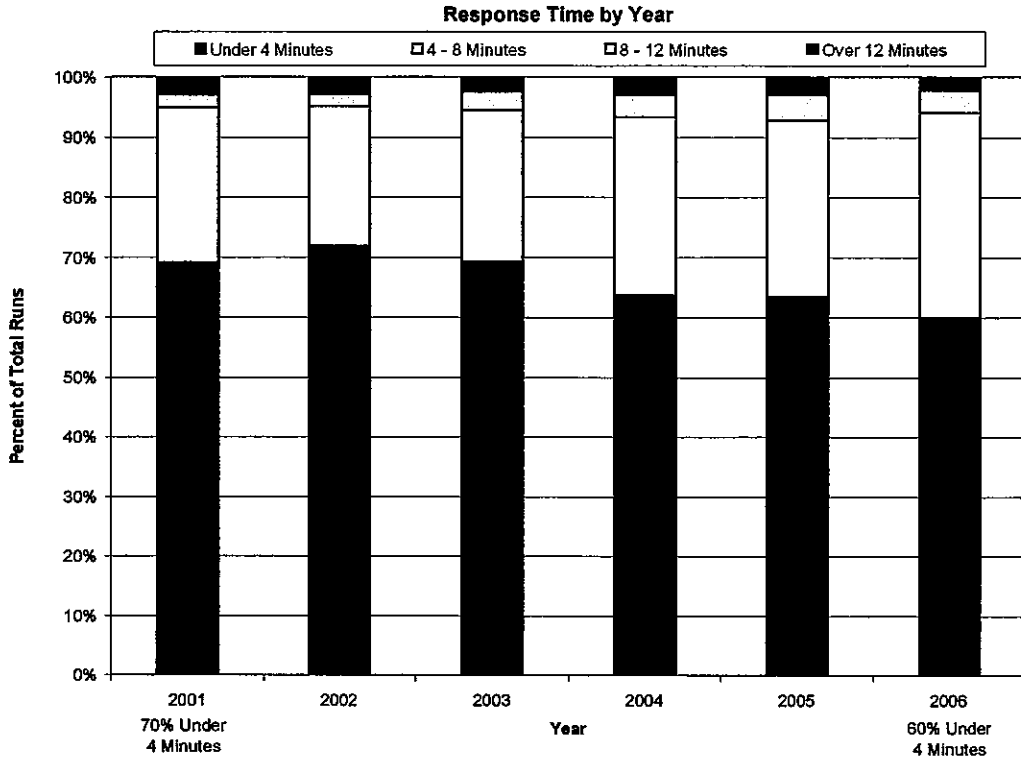


Figure 9: Response Time Percentages by Year

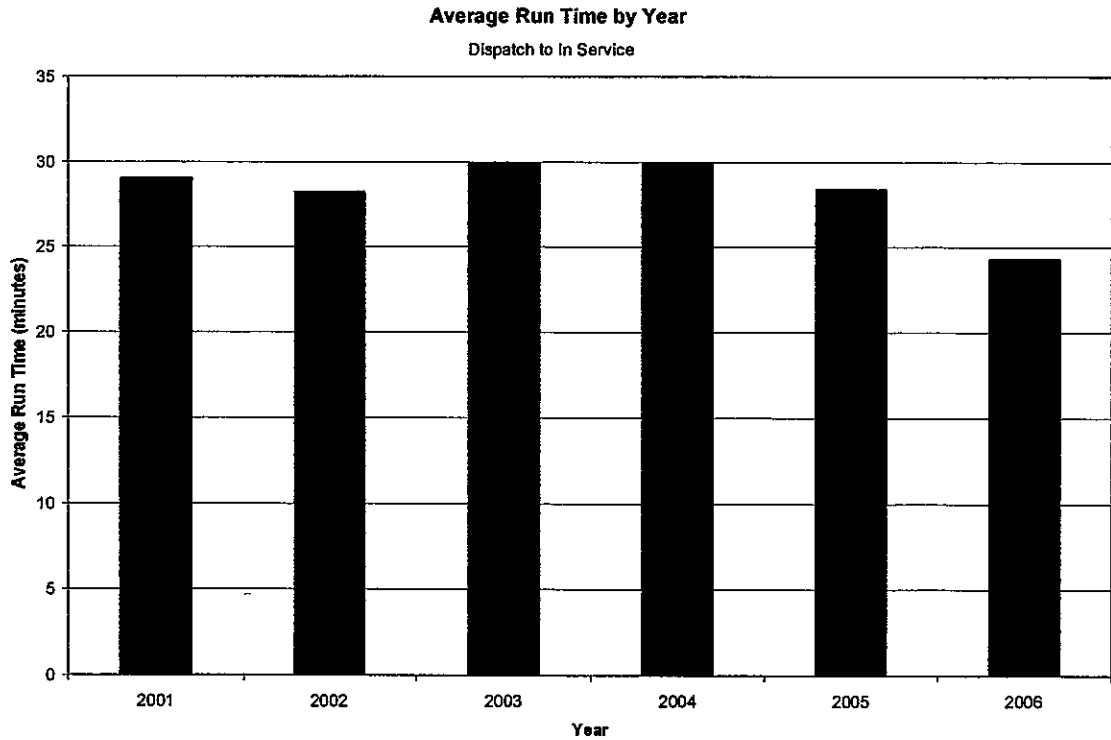


Figure 10: Run Time Averages by Year

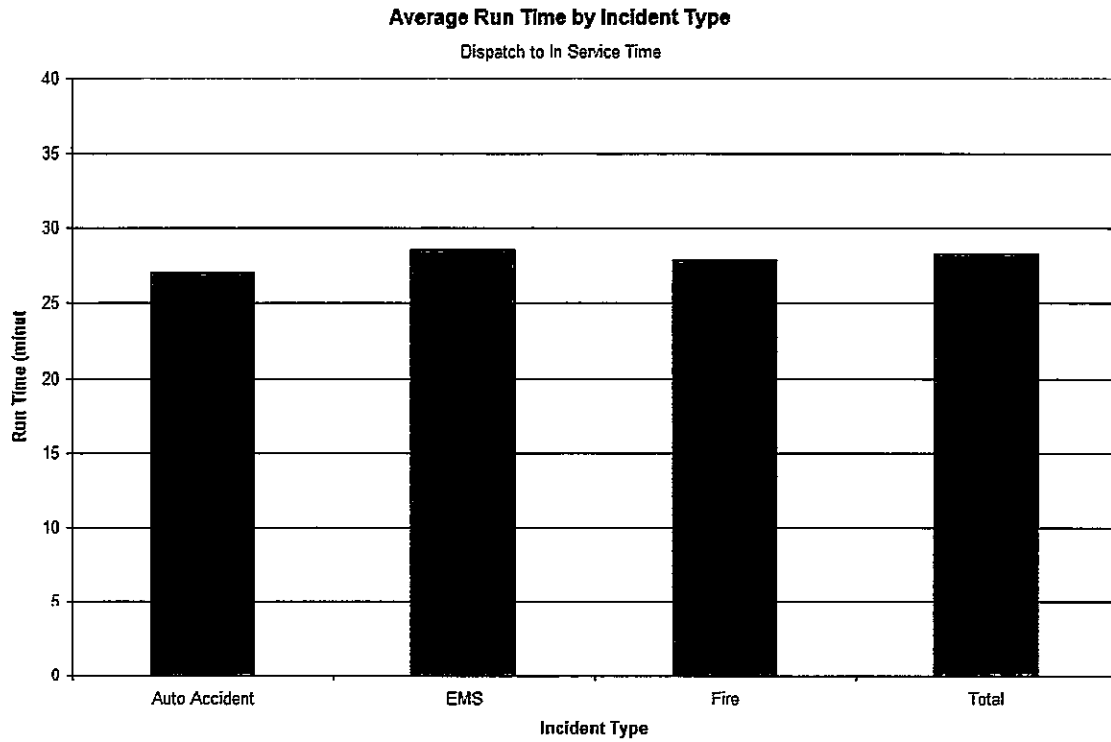


Figure 11: Run Time Averages by Incident Type

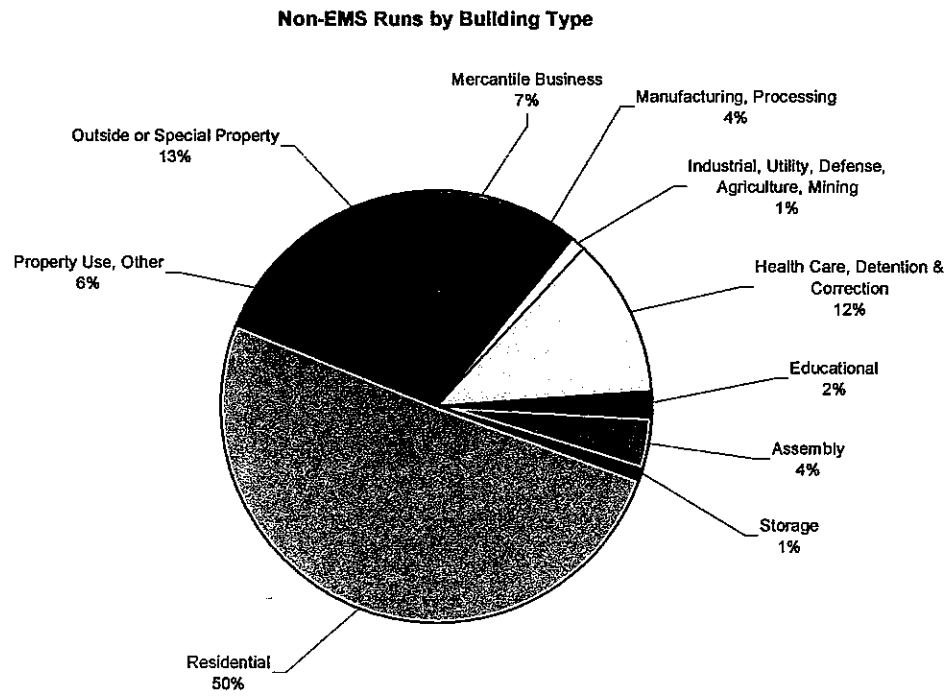
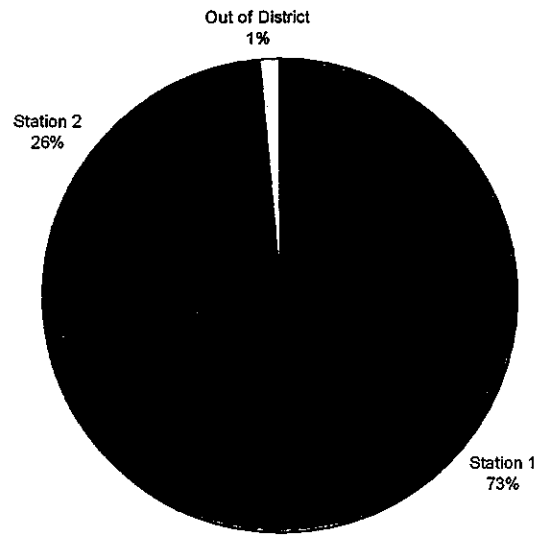


Figure 12: Non-EMS Runs by Building Type

**Incidents by District**



**Figure 13: All Runs by District**