

**Shrewsbury Fire Department**

**Ten-Year Strategic Plan**

**2002 through 2012**

**November, 2001**

**Chief Gerald F. LaFlamme**

Shrewsbury Fire Department Strategic Operating Plan, 2002 – 2012

November 20, 2001

This is a collaborative presentation. I would like to take this opportunity to thank the Town Manager for his confidence and support. I would like to recognize my fellow department heads who provided information and direction for this report. I would like to recognize the discussions with and input from the firefighters union as well.

Respectfully submitted,

Gerald F. LaFlamme  
Chief , Fire Department

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## **Historical Introduction**

Fire protection for the town of Shrewsbury is documented to have begun in 1850, with the opening of the first private Fire Company. This company, known as the Quinsigamond Engine Company was documented from the notes of the parish with the following notation: ‘if the parish would grant leave to have an engine house set up on their common’. The second fire protection notation was in 1851: ‘the Fountain came to town and set up (a) fire station on South Street. (This information was collected from The History of the Shrewsbury Fire Department, written by Michael Perna Jr.)

1896, a new fire station for the Quinsigamond Engine Company was built on the present site of Fire Headquarters.

1916, first Lake District Fire Station was established in the Dufresne Brothers Dairy property at the corner of Dewey Road.

**1927** the current fire headquarters was built at Church Road, housing the Fire Department and the Police department.

1930, the Lake Station moved to the corner of Lakeview, in the barn at Moalli’s property (the current Express Printing building).

**1940**, ‘first full time fire fighters were hired by the town.

1943, a new fire truck was housed in a private garage at Edgemere Boulevard

**1950**, the current Lake Fire Station was constructed by the town at Harrington Avenue.

**1962**, the town, at 100 Hartford Turnpike (Route 20) constructed the current Edgemere Fire Station

**1974**, Headquarters Fire Station was remodeled following the departure of the Police Department to new quarters.

# Shrewsbury Fire Department Strategic Operating Plan, 2002 – 2012

## Shrewsbury Fire Department

### A Historical Perspective of Fire Apparatus Purchases

1921	Mack Triple Combo truck	
1922	Cadillac touring car donated, converted to fire truck / ambulance	
1926	American LaFrance triple combo truck	
1927	Cities Service 4 way Combo Ladder truck	
1948	Farrar / Reo pumper	
1951	American LaFrance Engine 2	
1956	Farrar / Ford Combination 1	
1962	Farrar / Ford / Grove Ladder	
1963	Farrar / Ford Engine 3	
1964	Farrar / International Forestry 1	
1969	Farrar / Duplex Engine 1	
1977	Farrar / Hendrickson Engine 2	
1982	Farrar / Ford Brush Unit 1	
1986	Farrar / Hendrickson re-power of 1962 Grove Ladder	In service
1987	Kovatch / Ford Engine 4 (being replaced now)	In service
1986	Kovatch Engine 3	In service
1994	E-One Engine 1	In service
1997	E-One Engine 2	In service
2000	Kovatch Rescue 4	On Order

## Shrewsbury Fire Department Strategic Operating Plan, 2002 – 2012

Shrewsbury Fire Department  
Shrewsbury Fire Department

Response to calls for service 1990- 2000  
Source: Town Reports

type of call	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Structure Fire	138	76	107	79	115	107	106	87	78	85	76
Alarm of Fire	173	267	268	237	221	297	207	260	292	276	281
Vehicle Fire	132	47	47	56	35	50	49	59	51	62	43
Brush Fire	76	104	42	65	89	77	45	77	46	84	51
Other Fire Calls		147	129		144	144	115	119	171	179	216
<b>Response to fire calls</b>	<b>519</b>	<b>641</b>	<b>593</b>	<b>437</b>	<b>604</b>	<b>675</b>	<b>522</b>	<b>602</b>	<b>638</b>	<b>686</b>	<b>667</b>
First Responder	149	401	594	642	719	966	1100	1150	1237	1475	1640
Vehicular Accidents		132	183	202	206	225	225	291	282	336	308
Mutual Aid to Surrounding Town	5	4	8	5	7	12	12	8	8	15	9
Water Rescue	5			6	7	9	6	7	10	9	10
Bomb Threat	5	4	4				5	1	1	4	2
Hazardous Materials		38	37	38	23	26	34	32	42	33	28
Carbon Monoxide Alarms							66	65	57	39	4
Complaint from Public	38	19	21		40	46	28	33	33	31	31
Investigations					39	65	45	52	46	39	41
<b>Calls for Service</b>	<b>721</b>	<b>1239</b>	<b>1440</b>	<b>1330</b>	<b>1645</b>	<b>2024</b>	<b>2043</b>	<b>2241</b>	<b>2354</b>	<b>2667</b>	<b>2740</b>
Oil Burner Inspections									297	151	219
Smoke Alarm Inspections									958	1029	901
Business Inspections									78	80	150
<b>Inspections Performed</b>									<b>1333</b>	<b>1260</b>	<b>1270</b>

Shrewsbury Fire Department Strategic Operating Plan, 2002 – 2012

Shrewsbury Fire Department  
Ten Year Plan Analysis

	2002 budget	2003 budget	2003 + 4 men
Chief	\$ 80,849.00	\$ 83,712.00	\$ 83,712.00
Secretary	\$ 30,449.00	\$ 31,554.00	\$ 31,554.00
03 Account			
Regular	\$ 1,332,139.00	\$ 1,337,142.00	\$ 1,487,142.00
Holiday	63,585.00	64,295.00	71,505.00
Education incentive	30,151.00	30,485.00	30,485.00
Longevity	6,750.00	6,250.00	6,250.00
Training Stipend	28,800.00	28,800.00	32,400.00
Backfill-vacation	90,944.00	95,946.00	95,946.00
Backfill-sick leave	44,163.00	38,640.00	42,640.00
Extra duty	61,125.00	68,401.00	76,031.00
Work Incentive	3,151.00	6,296.00	6,296.00
Comp Time	15,000.00	15,000.00	15,000.00
On-Call Section	\$ 14,000.00	\$ 15,000.00	\$ 15,000.00
4/5/6 accounts	\$ 121,837.00	\$ 140,796.00	\$ 155,196.00
Totals	\$ 1,811,645.00	\$ 1,847,051.00	\$ 2,033,891.00
			<b>\$ 186,840.00 cost to add 4 ff</b>

## **Current Events Affecting the Fire Department**

Today, our Fire Department consists of three fire stations, four pumper engines, one ladder, the Chief, four Captains, twenty-eight firefighters, twenty-five on-call persons, and a secretary. This has been the same size and configuration of the Fire Department over the past thirty years. Town meeting of 1987 established a compliment of four more firefighters. These were hired and later not maintained as retirements returned the ranks to thirty-two as a result of fallout from Proposition 2 ½. The department today stands authorized and funded to thirty-two members.

Over the years many changes have occurred within and to the town. During the fifty years spanning 1950 to 2000, the town grew from a bucolic 10,594 to over 31,000 today. This growth brought with it a need for new schools, which is not yet satisfied even today. Hundreds of new roads were laid and now require attention from the Highway Department. A source of new water is always being sought. Demands for sewerage pushed the town out of the sewage treatment plant at Ward Hill and into a regional agreement with a plant in Westborough. During the past ten years, the number of housing starts has averaged over 225 per year.

The Police Department was doubled up with the Fire Department in a building that at the time was not of sufficient size for either department individually. In 1974, the Police Department was afforded a new building adjacent to Town Hall. At the same time, the Fire Headquarters was remodeled to better serve the needs of the department.

The Fire department has operated from five to eight vehicles over the past twenty years. The department maintained two brush fire trucks during a period when brush fires were serious matters that burned for days at a time. The apparatus compliment currently consists of one pumper/engine per station, one pumper/rescue, and one ladder truck.

‘Smoke Detectors Save Lives’ is a slogan used to promote home fire safety. Every home built since 1974 is required to have a hard-wired smoke detection system installed. This one law could be considered the most important legislation enacted for the fire service. Early detection and warning of occupants has undoubtedly saves lives and reduced property damage. A hint of smoke will alert the detectors and allow people to investigate a smoldering situation that before detectors would have grown to a free burning before being found.



Sprinkler systems are considered a silent firefighter. Sprinklers detect small incipient fires and hold the fire down until the Fire Department can respond and completely extinguish the fire. Laws have been enacted requiring installation of sprinklers in new buildings over 7,500 square feet. Currently, laws are being promulgated to include all buildings over 7,500 square feet. This law will undoubtedly create a workload to bring compliance for the buildings currently in place that are not sprinklered.

Home building materials and products have changed from traditional wood to everything but. Plastics make up more than half of every house built today. Decks, passage doors, bath fixtures, piping, home furnishings, and clothing are all petro-chemical plastics of one form or another. The burn rates of these materials are ten times greater than the burn rate of wood.

With the rapid changes in society, the extreme demands being placed on public safety since September 11, 2001, causing the nature of fire department responses to become more involved ( anthrax as an example), training will be key in a small department. Larger departments have the luxury of divisions of expertly trained teams or a certain few persons with specialized knowledge to handle very specialized situations. Smaller departments, like ours, run very lean and must depend on ongoing training to insure a proper response, and ultimately, to safeguard our own firefighters. As new risks to the community are discovered, new response techniques must be developed and implemented. These activities are concurrent with a comprehensive safety program for the department.

**Capital Equipment Replacement Schedule**

June, 2001-2012

<u>Purchased</u>	<u>Description</u>	<u>Replace</u>
1987	Kovatch / Ford <b>Engine 4</b>	FY 2002 \$275,000
1986	Farrar / Hendrickson with 1962 Grove <b>Ladder</b>	FY 2004 \$750,000
1988	Kovatch <b>Engine 3</b>	FY2007 \$325,000
1995	E-One <b>Engine 1</b>	FY2011 \$350,000
1998	E-One <b>Engine 2</b>	FY 2014 \$350,000

## Currency Report

**All fire departments exist to extinguish fire. As administrators of public safety, fire personnel must handle fires, crashes, collapses, floods, hurricanes, tornadoes, and medical emergencies. These events remain, as always, unscheduled and unpredictable. These calamities are time sensitive, life threatening, and labor intensive. You never know when they will occur, but when they do, you need lots of trained and equipped people immediately.**

### **INSURANCE SERVICES OFFICE and the MUNICIPAL RATING FOR SHREWSBURY**

For nearly one hundred years the insurance industry, from the National Board of Fire Underwriters to more recently the Insurance Services Office (ISO) has established standards used to benchmark municipal fire protection. The ISO is a non-profit, unincorporated association of insurance companies, that is not in the business of grading public fire protection, but exists to develop individual property fire insurance rates that reflect a profit for the insurance industry.

The level of municipal fire protection is one of the significant variables used to determine insurance rates. In 1980 the ISO developed the Fire Suppression Rating Schedule (FSRS) that evaluates and measures the community's fire suppression capabilities. The FSRS has been designed so that it can be used in any city or town in any state and will present an accurate snapshot of a municipality's fire protection capability

The FSRS is divided into three sections: (a.) receiving and handling fire alarms, (b.) fire department equipment and operations, (c.) and the municipal water supply.

The ISO make the determination on what a municipality needs for fire protection based on three methods: (1) the calculation of the basic fire flows required, (2) the distribution of fire companies as to the geographic location, (1 ½ travel miles for engines, 2 ½ miles for a ladder), and (3) actual fire department operations, using a guideline that a minimum response to a structure fire consists of two engines and one ladder. This operational evaluation is based solely on first alarm response and does not take into effect subsequent alarms response.

The most recent ISO survey conducted of the Town of Shrewsbury, in 1995 indicates that

(a.) receiving and handling fire alarms	7.28% out of 10.0%
(b.) fire department equipment and operations	27.20% out of 50.0%
(c.) the municipal water supply.	31.90% out of 40.0%

The 1983 report to 1995 report indicated a full point rise (5/9 to 4/9) in the overall ISO rating for the Town of Shrewsbury. There was also a loss of 5.07% credit that reflects the difference in relative credit strength of (b.) the fire department and (c.) the municipal water supply. This is to say the Fire Department not only drew a relatively low mark but it drew down the entire grade due to the low mark.

**It is important to note that apparatus staffing and fire station location were the significant factors that determined our eventual credit rate in (b.) fire department equipment and operations.**

It is likely that the Town of Shrewsbury will be surveyed by the ISO again in the near future. The fire department equipment and operations will be a pivotal factor in retaining the present rating. The purchase of the new rescue-pumper will enhance our ladder capacity. (The rescue will carry a 35', 24', and 14' ladder, qualifying as a back-up/auxiliary ladder, thus increasing our rating in that area. Responding with the ladder or the rescue on a regular basis will be the improvement factor.) Another issue to weigh-in is that the new ladder truck will carry a 2000 GPM pump that will qualify as another engine company...increasing the score in a second line area. Higher staffing will increase the score in a third area. All these incremental changes in the department will offset the loss for disparate score as well. The amount of the change cannot be simply calculated, but there will definitely be an improvement when all these changes are reflected.

If there are no changes the rate can only drop backward, given the increases in the number and dollar values of properties since the last review, thereby increasing insurance rates.

This ten year plan addresses the need for increased staffing and station relocation as necessary steps to move the department forward and as a way to look outside the box and effect a position that is more attractive to businesses when considering re-locating to Shrewsbury: better insurance premium costs.

## **PERSONNEL AUGMENTATION / INCREASED STAFFING**

Increased staffing manifests improvement in many facets. The first facet is that addition of staff will increase the number of firefighters available to respond on each fire truck. Safety calls for more than just a team, it calls for a team leader as well.

The creation of supervisory staff on each fire truck by promoting one of the three to lieutenant is the second facet. The Lieutenant, as platoon leader, assumes command of the situation, assesses safety for his troops, and directs progress against the emergency call.

Combining facet one and two creates a synergy, increasing to three the number of persons on a truck *and* the promotion of one of the three to Lieutenant creates a self-sufficient organization out of each station. Currently, when there is an emergency situation (such as a big snowstorm, hurricane warning, etc), the Fire department assigns

one officer, on overtime, to each station. In this manner, each station can respond to a call with their own supervisor. The span of control is shortened from 1 officer for 7 privates to 1 officer in each station with two privates. This facilitates assignment of specific responsibilities on each station crew and develops pointed responsibility for results. A third person and supervisory capability will increase productivity, safety, and accountability. Responsibility for completion of work will be decentralized and supervision will be direct in all cases. The span of control will be capable of expanding at an emergency scene to accommodate the influx of off-duty firefighters without overtaxing *one* officer with all the responsibilities of up to thirty personnel on-scene.

The fourth facet of this plan is to free up the Captain from running every call for service so he can concentrate more on administrative duties. The Captain is responsible for reconnaissance and intelligence gathering in the form of building inspections and surveys, data accumulation, permit facilitating, and paperwork accumulation. He also is responsible for finding, evaluating, and orchestrating in-service training. This is a very important aspect. An achievable goal is twenty hours of training per month. This requires a considerable amount of coordination within and outside the department to accomplish.

The fifth facet of the personnel expansion addresses the Deputy Chief (DC) / Fire Prevention Officer (FPO). This person will be responsible for developing standard operating guidelines for a broad range of department functions. Another important area to be assigned is Health and Safety Officer (HSO) / Incident Safety Officer (ISO). These duties include a safety and physical fitness plan for the department with attention to each individual. As ISO, the deputy will be responsible for designing and implementing an accountability system for all emergency workers, to be utilized at any given emergency. One of the major areas the deputy will oversee is the control and coordination of the Fire Prevention Program as conducted by the Captains and their shifts.

## **FIRES AND ALARMS**

'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00
519	641	593	437	604	675	522	602	638	686	667

There is no other branch of government trained for the rigors of firefighting.

While the number of calls to extinguish fires has not elevated in as significant a manner as the other areas, the ferocity and danger has increased dramatically. Petrochemical products in modern-day construction have replaced Wood. The BTU output from a fire is considerably greater in a fire in a new property due to this higher volume of plastics in the form of laminates, veneers and even imitation lumber. In today's construction market, even trusses (which are unsafe in any fire condition when made of wood) are being manufactured in plastics. The dimensional size of the building products has diminished with the use of truss construction, allowing a very short interval between fire start and potential collapse. Steel fails at 1000 degrees, and these fires reach upward to 2000 degrees within minutes. Combine tremendously higher BTU generation and more fire-susceptible material and you have a far greater fire than 'in the old days'. Wood is not the

fuel source, plastics are...the smoke is black now, not brown...not wearing a self contained breathing apparatus today is certain to harm you for life...trusses mean buildings FALL after fifteen minutes of burning.

## **TRAINING**

The realm of services provided by the Fire Department has grown significantly. As such, fire departments have recognized and adopted smart business practices that give taxpayers much more for their money. We cross train in firefighting, medical service delivery, rescue services, and inspection services, all to perform meaningful productive work (during what was assumed to be downtime in the old paradigm of fire department).

National Fire Protection Association recommends there be twenty hours of training per month to maintain adequate and up-to-date skill levels. That translates to 240 hours per year. During the past year, the department training included first responder (6), automatic external defibrillator (4), cardiopulmonary resuscitation (4), blood-borne pathogens (4), hazardous materials (8), extrication (8), confined space rescue (20), personal rescue techniques and rapid intervention teamwork (8), water movement (4), hose evolutions (8), conducting inspections (4), developing building profiles (8), computer operating (20). Each group trains on a smaller scale on strategy and tactics when time allows. One officer attended the National Fire Academy at Emmitsburg, Maryland for two weeks and many members have attended various classes at the Massachusetts Firefighting Academy (MFA) in Stowe. Six firefighters also are cadre at the MFA during their off-duty time.

Fire department training programs have been overburdened by the need to address so many topics and become proficient in as many of areas as possible. There is no time left in a typical day to fit in a session of solid, meaningful training. (Any given call for service involves a minimum of an hour, including response time, service the call, repack/clean-up on scene, return time, service the equipment.) The changing role and scope of services provided by fire departments necessitates more training at the very time training is becoming harder to arrange and deliver due to increased call volume.

## **EMERGENCY MEDICAL SERVICE DELIVERY**

'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00
149	401	595	642	719	966	1100	1150	1237	1475	1640

Emergency medical service in the form of first-responders now creates two thirds of the emergency calls received for service. In the mid eighties the town stopped providing ambulance service for the townspeople. It simply became cost prohibitive to comply with bigger, better, and newer regulations placed upon ambulance operators. Privatization of transportation of the patients did not stop the necessity for the Fire department to respond on every medical service call. It shifted the responsibility and liability of extended patient

care but did not reduce the need to respond to the call in the first place. All firefighters are trained to first responder level and are encouraged to continue training through the Emergency Medical Technician level. Emergency medical service is cumulatively traumatic to providers over time and can cause burnout if they are not trained to a level at which they feel confident in your patient service delivery.

The Fire Department co-operated (one police officer and one firefighter) an ambulance until the mid 1980's. This service proved too costly in training and in pension costs and was contracted out. Since that time the primary care delivery for the Fire Department has been at the first responder level with advanced life support coming from an outside contractor. The current contractor for ambulance service is UMMHC. There is one Paramedic ambulance stationed at the Harrington Ave fire station with back-up service coming from their Worcester station.

Massachusetts EMS 2000 (March 2001) is legislation that potentially affects every community as to how they deliver training, equipment, and deployment of emergency medical services. EMS 2000 is collecting data from all municipalities and will make rules based on the data received. The full affect of this legislation is unknown, since the rules and regulations have not yet been drawn. There is no doubt this will be intrusive and expensive. Licensures, certifications, and compliance inspections (with fines) are the keystones of this legislation. The EMS 2000 and NFPA 1710 standards already require a response of four persons, with Automatic External Defibrillators capabilities, on emergency medical calls. This translates to Fire Department response to *every emergency medical call*. (The key here is every emergency call, not every cardiac call.)

**VEHICULAR ACCIDENTS**

'91	'92	'93	'94	'95	'96	'97	'98	'99	'00
132	183	202	206	225	225	291	282	336	308

With the continued increase in population comes an increase in vehicular traffic and a corresponding increase in the frequency of accidents. Every accident call requires medical attention to be delivered by the firefighter / first responder and in many cases also requires patient extrication to be performed along with the medical attention. This level of service necessitates two trucks and four firefighters to perform the multiple tasks as simultaneously as possible. To better facilitate this need a second engine company has been outfitted with special (and expensive) extrication tools and is geographically located in the opposite end of town from the first.

**HAZARDOUS MATERIALS**

'91	'92	'93	'94	'95	'96	'97	'98	'99	'00
38	37	38	23	26	100	97	97	82	32

Hazardous Material Incident mitigation is an area where the department has accumulated quite an inventory of defensive supplies and significantly increased the amount and type of training. All members are trained to the Hazardous Materials First Responder Operational level. That training consists of forty hours of classroom and field training. Defensive actions are developed and drilled. The department, due to the intense level of training required, undertakes no offensive actions. Utilizing the Regional HazMat Team (organized, operated, and controlled by the Dept. of Fire Services) avoids the expenditures at the local level on what are prohibitive costs of equipment and supplies required to perform at the higher (technician) levels. The state maintains hazardous materials teams for the purpose of conducting offensive operations. The teams are available to any municipality 24/7 at no charge. These teams have been called in and have operated in Shrewsbury on numerous occasions

### **CONFINED SPACE OPERATIONS**

In line with hazardous materials training, confined space rescue technology has changed significantly as well. The old swoop-n-scoop method is no longer valid. As an example, a man down in a hole was thought to have suffered a heart attack when in fact he was overcome in an atmosphere void of oxygen, suffocated, and died. This realization led to purchasing a series of equipment capable of monitoring, evacuating, changing, and entering potentially dangerous atmospheres. With each new equipment purchase came hours of training for every department member on familiarity and implementation of the equipment and new procedures.

### **INSPECTION SERVICES**

Fire inspection and education is responsible for the drop in the actual number of fires as well as the severity of the fires experienced. Smoke detectors are the most important reason for drops in fire losses and loss of life in fires in residences all over the United States. Sprinkler systems are the second most important reason.

Inspections performed by the department include

*Every* oil burner installation or alteration.

*Every* mortgage transaction for any home requires a smoke detector inspection.

*Every* school is inspected annually.

*Every* school has fire drills performed and timed quarterly.

*Every* health institution is inspected quarterly.

A good faith attempt is made to inspect *every* business once a year.



Inspection Services has increased substantially. With the introduction of computers and the ability to sort, store, and retrieve data instantaneously, the lack of current, in depth information became apparent. In the past, fire prevention was unsophisticated and paperbound. In 1987 Digital Corporation donated the first computer to the fire department. In 1992 an Apple computer was introduced. This system was small but allowed exposure to computers as well as accumulation of some data in an orderly fashion. The one computer was located at headquarters and was operated solely by the officer.

In 1993 a fire prevention program was initiated and every business in town was visited to accumulate clerical information on each business. In the past year a new server-based computer system has been installed in every station that will link all stations online. FIREPOINT fire department specialty programming is being introduced that accumulates information of importance to all firefighters, such as a hydrant locator file, permit files, inspection files, and other databases. This system is used to train and educate firefighters on an ongoing and trackable basis. FIREPOINT also will be utilized to complete the first ever database specific to each building in town. There will be talks with GIS and the Assessors office toward interfacing the three data sections.

The building Inspector and the Fire Chief work toward satisfying building code aspects of every property. Following occupancy the fire Department is responsible for adjusting the life safety aspects of the set up that is put into the building.

Stated in oversimplified but understandable terms, the Building Inspector establishes the criteria for the bricks and mortar and life safety of the intended occupant. Once the building is cleared for occupancy, it is the responsibility of the Fire Department to revisit the property initially and often to constantly check on the use and appropriateness of the life safety devices and placement as the property dynamically changes from time to time. For example, simply shuffling of office partitions may render an existing emergency exit unusable.

**PLANS REVIEW**

Building in the Town of Shrewsbury has increased in pace and continues to increase year to year. Private housing starts are a classic example of this trend.

'91	'92	'93	'94	'95	'96	'97	'98	'99	'00
125	288	256	222	157	221	261	269	243	178

The Master Plan and build-out studies point out there are opportunities to build another 4,600 houses in Shrewsbury. Following the logic of the long-range planning committees

and utilizing more land for industrial than for residential would slow residential growth somewhat. However, witnessing the sprawl out from Interstate 495 into surrounding towns, the selling process of those properties currently effected by the sprawl, and the current selling process in town, the housing starts are only limited by the willingness of the current owner to join in the financial bonanza. The recent drop reflects the unavailability of larger parcels to build on, not any lack of interest or builders or buyers.

Every property that is constructed, remodeled or added to requires an inspection by the fire department. The Captains are responsible for single and duplex residential property permitting and inspections and the chief is responsible for multiple family residences and all aspects of commercial properties.

Individual inspections of detection systems are routinely performed by the individual firefighters.

Commercial, industrial, and mercantile plan review are performed by the Chief, in concert with the various other inspection service departments. Much of the Chief's time is taken up with these reviews since they are highly technical and represent the life safety functions of the buildings. Further exacerbating the time spent on these types of reviews is the separation of building from its use. The building Inspector and the Fire Chief work toward satisfying building code aspects of every property. Following occupancy the fire Department is responsible for adjusting the life safety aspects of the set up that is put into the building. This function repeats itself constantly for every property. The importance of the repeat visits is highlighted in a particular property that has been subdivided into a large number of individual offices, each subleased, without benefit of building permits. The property is there and now Fire and Building Departments have to deal with it, bringing the property from as-built condition to the lawfully correct condition.

All this work is supervised by a single Captain, responsible to control, direct, execute, correct, and record. This one officer is responsible for all fire related activities, including running the shift, responding to alarms, training his cadre, maintaining the equipment, keeping the records, and maintaining the work flow. Our Fire Department is the only department that actually lives in the buildings. The officer is the father figure to his shift, maintaining harmony and discipline. The one officer is in charge of three stations and all members reporting for duty. This one officer is solely responsible to run a fire scene and direct all aspects of the scene, by himself, with only six firefighters on duty to handle the initial response.

**One can see, the issue is not a question of productivity; it is an issue of safety in the workplace and span of control**

### **Background of Incident Command**

The INCIDENT COMMAND SYSTEM is the baseline standard operating procedure employed in emergency management. ICS, as it is referred to, is a creation of the fire service. The large scale wild land fires experienced in the west raised the level of firefighting to that of a small war, involving multiple layers of many agencies from local, state, and federal jurisdictions simultaneously. The critique of operations following these major campaigns brought to light a true Achilles heel in the fire service... communication, equipment, and personnel

(The recent brush fire in the Green street area demonstrated the need for communications improvements. Twenty three fire departments responded, each on a different frequency on three different band widths. Seventy firefighters from out-of-town, with thirty pieces of equipment came together on a phone call to assist.)

Occupational Safety and Health Administration (OSHA), Superfund Awareness Reauthorization Act (SARA Title III), and the National Fire Protection Association (NFPA) all include formal incident command as an important part of the standards issued for fire departments to benchmark against.

The result was the formulation of a toolbox-like configuration of assets. . The organization is flowchart orientated. Each field of expertise is filed into a subdivision (cabinet), which is further subdivided into asset management categories (drawers). All players are assigned a position with a mission and a role specific to that group (files). The group is activated only if needed. The power of the system is in the preplanning. Each group is defined, has a mission, and performs its role only when called upon.

The Incident Commander controls the entire system; usually the Fire Chief (in his absence, the ranking fire officer on scene) The following page is a diagram of the Incident Command System.

**Shrewsbury Fire Department  
Incident Command Fire Model  
June, 2001**

<b>CHIEF</b>
--------------

<u>Safety Officer</u>
<u>Liaison Officer</u>
<u>Information Officer</u>

<b>Operations</b>	<b>Planning</b>	<b>Logistics</b>	<b>Finance</b>
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<b>Staging Manager</b>
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<b>Size-Up</b>
<b>Sufficient Help?</b>
<b>Ensure Life Safety</b>
<b>Occupants and Firefighters</b>
<b>Protect Exposures</b>
<b>Evacuate</b>
<b>Ventilate</b>
<b>Extinguish</b>
<b>Salvage</b>

In the work area, a minimum team of two persons assumes each position. The members of these groups work together constantly, allowing for training and familiarity with roles to be accomplished. These players may be internal or external (mutual aid) to the organization

**There is a demonstrated need to increase the manpower of the fire department.**

## **Implementation Steps to be followed to carry out the Fire Department Ten Year Plan**

### **READINESS REPORT**

In May, 2000, the Town Manager appointed me as your Fire Chief. A report was prepared for the Manager addressing the issues that could and would affect the readiness of the department. The issues of training, equipment, manpower, morale, and repair and replacement were discussed.

Risk management plays a major role in operating a fire department. How we manage our risk results in the typical, daily operation of our fire department. This includes emergency situations such as fire extinguishments, fire alarms, emergency medical services, industrial and vehicular accidents, tornadoes, hurricanes, and storm management. The list goes on to include lockouts, well being checks, help a resident, check a complaint, or remove an animal. Most recently bio-terrorism and weapons of mass destruction have been added to the workload and are impacting the daily operations in a big way.

The department delivers many educational opportunities for the townspeople. Project Alarm supplies and installs smoke detectors for senior citizens, free of charge. SAFE is an educational program delivered through the school system promoting life lessons in fire safety. SAFE has recently expanded the programs to include senior citizen awareness of fire dangers. Fire Prevention Week has always been a central program for the fire department. Recently, firefighters have begun an annual blood drive, with great participation from both town employees and citizens. The firefighters have participated in the Spirit of Shrewsbury project on a larger scale each of the past three years.

Inspection services continue to involve a large block of our time. As reported elsewhere, inspections are performed *every* day, for homes, businesses, nursing homes, and schools. Permit inspections for detectors, oil burners, and occupancies number upward to two thousand per year.

All this activity notwithstanding, our main business and most dangerous occupation is the extinguishments of fires. As you read in other sections of this report, the number of firefighters has remained constant, except for a very short period of increase and immediate attrition, at thirty-two.

**For a period of over thirty years the size of the fire department has never changed!**

## Shrewsbury Fire Department Strategic Operating Plan, 2002 – 2012

In order to maintain the service level enjoyed by the taxpayers of Shrewsbury, the Fire Department requires re-organization, eight more firefighters, the advancement of eight firefighters to the rank of Lieutenant, and a Deputy Chief.

The number of calls has multiplied five-fold. The population has increased three-fold. The number of pieces of fire apparatus has decreased. The number and location of fire stations has never changed. The fire department is providing many services that did not exist ten years ago. It is not uncommon to respond to two calls simultaneously. More occasions are presenting themselves when three calls are being attended to at the same time.

The present compliment of thirty-two members and three fire stations allows for the placement of two firefighters in each apparatus. The supervisory staff consists of one captain who is responsible for all matters that come before the fire department. There is no inspection division, no fire prevention division, no training division, and no investigative division: just one officer on duty with seven firefighters.

### **NATIONAL FIRE PROTECTION ASSOCIATION**

‘The National Fire Protection Association provides codes, standards, recommended practices and guidelines..... These are documents that are advisory or informative in nature, the provisions of which are expressed in non-mandatory terms.’ (NFPA, i & ii)

It should be kept in mind by all parties that we are not bound by law to follow all the requirements set forth by NFPA. This is a nationally recommended standard, not a statutory requirement. However, since this is a nationally recognized set of recommendations, the fire department does subscribe to the philosophy and intent of the standard and strives to meet the standard whenever possible.

NFPA 1500-6.1.1 The Concept of Risk Management is utilized on the basis of the following principles...

Activities that present a considerable risk to the safety of members shall be limited to situations where there is a potential to save endangered lives

Activities that are routinely employed to protect property shall be recognized as inherent risks to the safety of members, and actions shall be taken to reduce or avoid these risks

No risk to the safety of members shall be acceptable where there is no possibility to save lives or property

NFPA 1500: Standard on Fire Department Occupational Safety and Health Program

## Shrewsbury Fire Department Strategic Operating Plan, 2002 – 2012

First developed in 1987 form, NFPA 1500 raised the awareness level of the fire service on how to work safely in a dangerous occupation.

This department has addressed many aspects of the recommended NFPA standards and is in compliance in notable areas. Apparatus are built according to the standards set out by NFPA. Protective personal equipment is required to be NFPA compliant. Training delivered to firefighters is matched to relevant competencies as stated in NFPA National Fire Codes.

NFPA 1500-6 establishes a recommended Incident Management System. NFPA 1561 sets the criteria for an IMS. Today, the department is in the process of deploying an IMS that has been drawn directly from a nationally recognized text on the subject.

NFPA 1710 & 1720 are in the process of acceptance. These standards divides the fire service( fully-paid, combination, on call, volunteer) and sets response times and on-scene manpower requirements for departments to strive for.

**TODAY...**

In the year since I was appointed Fire Chief I have laid out a capital plan as well as an overall plan that will advance the department and meet the needs of the fire department for the next ten years.

**Identifying the need to work in a fiscally prudent approach, I laid out five categories of need, along with a time line...**

1. Repair existing equipment in order to restore the readiness of our current line of apparatus.
2. Purchase new equipment to augment the current inventory, upgrade the existing tools, and develop equipment packages specific to certain tasks.
3. Purchase a new pumper rescue apparatus that will carry all the necessary tools and equipment in an efficient and effective manner.
4. Replace Fire Headquarters.
5. Increase the size of the fire department to reflect the needs of the town.

**Items one, two, and three have been completed.**

The repair of existing apparatus has been completed within the operating funds of the fiscal 2001 budget.

The purchase of new equipment was accomplished within the 2001 budget also, where an eight-account item for a Hovercraft was converted to new ancillary equipment, with the knowledge and agreement of the Finance Committee. This was a windfall occasioned by the outright donation of a Hovercraft to the town through a combination of gifts from The Donahue Foundation and The Shrewsbury Fire and Police Water Safety Association.

During fiscal 2001 the American Legion Victor Quaranta Post donated \$25,000 to purchase a thermal imaging camera.

During fiscal 2001 the town received a grant from the Commonwealth for \$31,889 to be used exclusively for firefighter safety equipment. This grant was a direct result of the review of outcomes occasioned by the tragedy of December 3, 1999 in Worcester where six firefighters were killed in a warehouse fire.



These three very generous donations and the state grant contributed significantly in moving the department ahead in its capital planning. A new pumper rescue has been authorized by town meeting within the articles for 2002 budget.

In FY 2002 the radio communications are being addressed. Twenty portable radios were purchased from the Fire Act Grant of 2001 (\$15,000) Anticipated grant funds for 2002 shall be applied to further enhancements (expected 2002 grant \$25,000). A line item in FY2002 budget for \$27,000 will round out the final phase of the communication upgrade.

The 2002 budget includes a new rescue-type pumper that is sorely needed. The addition of a special ladder configuration on the rescue will qualify the rescue as a reserve ladder. This will have a beneficial effect on our ISO rating in the next evaluation.

**I am proposing that the department add eight new firefighting positions, beginning with four in FY 2003 and four in FY 2005.**

These positions will be distributed to increase the number of firefighters responding on the apparatus. Currently there are two firefighters per fire truck. This necessitates the dispatch of two fire trucks to every incident in order to deliver services of any credible level. Three members on each vehicle would allow the department to rework its response patterns by dispatching one vehicle with sufficient manpower to perform the necessary work with that one unit. Increases in call volume can be offset with single truck responses while still providing comparable service level for each call while maintaining a sufficient support staff to handle subsequent operations.

Safety is a serious issue that will be addressed as well with three members on each unit. The NFPA recommends four members per piece of apparatus. The townspeople should recognize that four firefighters on each vehicle are fiscally unobtainable with the present three-station configuration. No section of town wants to lose the coverage they have grown accustomed to. Simply stated, the benchmark cannot be lowered at this juncture. Our customers, the taxpayers, expect the current, timely, competent, professional delivery of services to continue. That expectation lives within the fire department personnel as well. No firefighter would stand by and allow a fire station be closed to put more people on the other two trucks. That would disrupt the whole delivery system, lengthen the response time, and cease to provide the ability to service multiple calls simultaneously.

**I am proposing that the department promote four members to the rank of Lieutenant in FY 2003.**

A fire company should be able to function as an independent unit at *every* scene in order to permit the Incident Commander to employ the proper tactics and strategies to safeguard the occupants as well as the operating forces, and to further protect the property involved in the incident.

The maximum span of control in any organization is seven. Any organization is under full stress on its systems when operating at that level. At fire scenes, operating within the scope of incident command, there is a true need for at least three supervisors, front, back, and inside. Away from the fire scene, each station needs to be capable of operating as a separate firefighting unit, complete with a supervisor to make the decisions and accept the responsibility of the event. The Captain can be freed up from responding to *every* call and redirect his time and effort to performing better at his managerial duties while handing off the daily call volume to the Lieutenants to manage. The Captain will still be available to respond to a situation large enough to require his supervision and expertise when required.

**I am proposing a new position of Deputy/Fire Prevention Officer be created within the Fire Department in FY 2004.**

Normal call volume averages eight calls per day, weighted to the 8-5 period, each call spans 40 minutes from out-the-door to back in station and available. Inspections are currently performed between normal call-volume. Follow-up and continuity are crucial to a successful program of inspection and prevention. The volume of paperwork requiring to be archived is growing as fast as the town is growing. Computerization is collecting important data and needs to be orchestrated by one control person. Plans review consumes more time and requires more expertise, with new laws to changing the dynamics daily, unabated growth from new businesses, and the constant changes in usage of buildings as businesses move and evolve. Certification as a Certified Fire Inspector will become a requirement in the near future. The work runs concurrent with industry, 8-5, Monday through Friday. This position will be a non-civil service position. This position will report directly to the Chief and will oversee training, education, inspection services, data collection and archival, as well as continuity of daily operations from shift to shift.

Quoting from the section on current events, “training will be key in a small department. Larger departments have the luxury of divisions of expertly trained teams or a certain few persons with specialized knowledge to handle very specialized situations. Smaller departments, like ours, run very lean and must depend on ongoing training to insure a proper response, and ultimately, to safeguard our own firefighters. As new risks to the community are discovered, new response techniques must be developed and implemented. These activities are concurrent with a comprehensive safety program for the department.” This comprehensive safety program will be the most important function of the new Deputy.

**I am proposing a new Fire Headquarters building be constructed in FY 2004.**

Station Three, Edgemere will be closed and re-opened as a new headquarters on land to be acquired by the town along Memorial Drive. This new headquarters will be

## Shrewsbury Fire Department Strategic Operating Plan, 2002 – 2012

approximately 22,000 square foot, containing four 100-foot drive-through bays and a two-story administration building. The estimated cost, based on similar facilities built in the area, will be \$4.5 million.

The current headquarters was literally built for horse and carriage in 1927. Today, equipment takes up so much floor space that a firefighter has only a two-foot walkway between the front of the apparatus and the overhead doors and cannot traverse front to back in the building except at each end of the garage. There are no work areas or storage areas. The ventilation is poor and leads to noxious fumes entering the upper floor every time a truck is run in or out of the building. The doors on the apparatus do not open fully to allow entry or exit from any truck. The current headquarters station, on the common, will be downgraded to a sub-station, freeing up some room and relieving the congestion found inside as well as outside the building. Fewer truck starts and stops will bring the ventilation to within a manageable level (along with some inexpensive modifications at that time).

The present building has been overcrowded for twenty years. As a result of making due with the present configuration there is active equipment stored in cellars. The apparatus is constantly subjected to damage from simply opening doors onto the truck in the next bay. There is no space for the officers to use as an office. The operations room (12 x 20) is used for dispatch, library, permit office, officer's work area, 911 sub-station, computer room, day-room for firefighters, record storage, and the only room to attend to the public in. A storage room has been converted to a locker area for firefighters. The secretary's office is 8' x 16' and contains five file cabinets, two computers, fax, photocopier, and desk. The department mechanic works from a 6 x 8 room. The secretary's storage closet doubles as a ladies room. As noted previously, there is no way to walk between the trucks from front to back in the building. The ladder extends through the rear of the building into a storeroom. A new platform/ladder will not fit in the present headquarters. The special operations trailer should be centrally located at headquarters but has to stay at the Lake because there is no room for it uptown. The treasured handtubs that mark the first days of the fire department are buried in the basement of the lake station, under canvas.

The new garage area will be designed to accommodate an inventory of four major trucks, a car, a pick-up, and two trailers. The fourth bay will be built to accommodate future equipment, such as a rescue truck or a mini-pumper, and ancillary equipment as it presents itself. One side of the building will have storage capacity, generation equipment, and an open hose storage area.

The building area will contain living quarters for eight persons and accompanying locker/personal space for twenty persons, including complete female quarters / arrangements, and a wellness / physical fitness area. A classroom on the first floor will also serve as a multi-function public room. A foyer will be included to display our historic handtubs. Office space will be allocated for fire operations, Chief, secretary, officers, Inspection Services, SAFE, and service to the public (only the Chief and secretary have offices at this time).

**I am proposing that the department promote four members to the rank of Lieutenant in FY 2005. (upon completion of new Headquarters)**

Following the completion of the new headquarters building the department will be realigned to reflect the more management orientated use of the Captains. This will be accomplished by shortening the span of control beneath the captains, eliminating the need for the captain to respond to calls for service not requiring his level of expertise. This will allow more time for captains to devote to management objectives. Lieutenants will answer all calls and the captain will concentrate on management and be available to back up the line officers when the captain's expertise is needed at a given incident.

Shrewsbury Fire Department Strategic Operating Plan, 2002 – 2012

Shrewsbury Fire Department  
Detail of Call Activity 2000

call type	Prec. 1	Prec. 2	Prec. 3	Prec. 4	Prec. 5	Prec. 6	Prec. 7	<b>Prec. 8</b>	Other	
Building Fire	5	16	10	12	11	7	15	<b>4</b>	8	88
Fire Alarm	11	53	34	28	48	22	15	<b>66</b>		277
M V Fire	11	4	7	6	3		3	<b>8</b>	1	43
M V Accident	30	55	24	42	30	33	21	<b>73</b>		308
First Responder	181	312	205	162	215	114	105	<b>343</b>	1	1638
Brush Fire	4	8	8	6	6	5	7	<b>7</b>		51
Hazardous Mat'l Incident	1	4		12	3	2	2	<b>5</b>		29
Act on Complaint	3	6	5	3	3	4	4	<b>3</b>		31
Mutual Aid									1	1
Rescue Water/Ice		6	1	3						10
Bomb Threat				1			1			2
Perform Investigation	5	6	4	10	1	2	6	<b>7</b>		41
Carbon Monoxide Threat	4	5	4	9	9	6	6	<b>11</b>		54
Miscellaneous	21	46	21	30	26	19	19	<b>34</b>		216
	276	521	323	324	355	214	204	<b>561</b>	11	2789

As highlighted, precinct 8 has drawn a remarkable volume of activity. Presently, precinct eight is more than six minutes away from any station. This geographic imbalance, the increased call volume, and the need for space requires the relocation of station three from 100 Hartford pike to a more central location.

Memorial Drive would provide a location more equidistant from the east and west borders while increasing the usefulness of the station for the remainder of the town by locating the station on a major, central, north/south thoroughfare. This move will reduce response times for a significant area and population. The response to the southeast corner of town, under the present configuration, is seven minutes travel from all three locations.

Relocation of Station Three will shorten the response travel time for the entire southeast quadrant of the town to under four minutes. Edgemere proper will have extended response times but the new times will be no greater than four minutes. (See response time graph in appendix)

The town is actively promoting industrial and commercial growth in the Route 20 corridor. This will increase the calls for service from this area. The new senior residential complex under construction off Purinton Ave. is expected to generate 100 calls for service per year, based on service currently being delivered to Southgate, 311 Main and Westbrook Crossing.

**Aerial One requires replacement in FY 2004**

This replacement will be concurrent with the completion of the new headquarters building. This aerial platform will be built with ease of set up and operation while delivering the most work that can be performed by the least number of operators. (This one piece of equipment can be used by one or two persons and perform the work of many more if they were using less sophisticated equipment. The cost, \$750,000 will be provided for from the stabilization fund.

The inclusion of a pump on the aerial will increase our pumping capacity and apply credit to the ISO rating schedule as a fifth pumper.

## **SUMMARY**

The Fire Department has operated with pride, dedication, and professionalism since its creation in the late 1940's. No challenge delivered to the fire service has gone unanswered. While operating costs have risen substantially and call volume has quadrupled, the number of personnel performing the work has remained the same for over forty years.

It is important to the personal safety of our firefighters that the number of personnel expected to perform this work increase to what is mutually understandable, achievable, and agreeable to the membership and the administration and this coming together of the various interests is presented in this ten-year plan.

The plan is weighted into the first five years for the simple reason that the changes are needed *now* but all recognize the need to temper the changes over time. As detailed in the Readiness section, much has been completed in the first year of my tenure. Better communication has led to greater cooperation and a marked increase in the level of pride in the department, the apparatus, and the work performed.

Eight more firefighters are needed to enable the department to follow a plan to deploy three firefighters from each fire station, thereby increasing the work expected to be performed by a single unit, while also establishing accountability by creating a direct supervisor for each unit.

Four Lieutenants are needed to shorten the span of control at incidents and to raise the accountability of each station/unit, while at the same time relieve the Captain from responding on *every* call for emergency service, thus allowing him to direct more of his attention to his administrative/managerial workload.

A Deputy/Fire Prevention Officer is sorely needed to direct and administer the training, education, inspection, and the paperwork flow through the organization. The Captains are presently doing this poorly. The reason is not poor work. Considering the workload, it is amazing that so much is being done now. The reason is that no one is available to connect and continue the workload from today to tomorrow.

### **The cornerstone of the ten-year plan is a new Fire Headquarters.**

A new fire department headquarters will include a formal classroom, a foyer for displaying the handtubs, storage capacity for department records, offices for the Chief, secretary, Captains, Fire Prevention, public services, and operations. Living areas will be established for male and female firefighters. A physical fitness area will be established to comply with wellness mandates imposed by the state for all firefighters and police officers. Sufficient apparatus area will consist of four bays wide and two bays deep, along with commodity storage rooms along the outer wall.

The parcel of land shall be large enough to accommodate a training area with ample parking, and front and rear entry into the bays. The new station could be designated a polling station during elections. The police boat can be stored at station two in a ready status when not in the lake.

It is important to note that this plan is put forward as the strategic vision for the Fire Department, an amalgam of interests, including the fire fighters, the union, (NAGE Local R1-273) the Fire Chief, and the Town Manager. It is a continuum of the planning that was set in motion eighteen months ago.

**Identifying the need to work in a fiscally prudent approach, I laid out five categories of need, along with a time line...**

1. Repair existing equipment in order to restore the readiness of our current line of apparatus.
2. Purchase new equipment to augment the current inventory, upgrade the existing tools, and develop equipment packages specific to certain tasks.
3. Purchase a new pumper rescue apparatus that will carry all the necessary tools and equipment in an efficient and effective manner.
4. Replace Fire Headquarters.
5. Increase the size of the fire department to reflect the needs of the town.

Item one, two, and three have been completed. These were budgetary items easily attainable on a one-time basis. The cost of personnel is a long-term commitment to improving service for the taxpayer and adds a new level of safety to an intrinsically unsafe job. Our operating theater is where everyone else leaves in fear of their safety, even their life. Command and control are baseline requisites to our style of work. Should the fire department today cease to perform services not directly related to fire extinguishments and medical care, the department would still be understaffed. While entering new areas of service never before faced, such as weapons of mass destruction and hazardous materials, all the old bases have been covered and the new work has been assimilated: all with the same number of personnel as thirty years ago. In closing, I wish to state one last time, it is not an issue of productivity, it is an issue of safety.

Respectfully submitted

Gerald F. LaFlamme  
Fire Chief



### Related Items of Change

The introduction of a new layer of officers into the department offers an opportunity to reset the parameters for promotion. In the past any person employed for one year as a firefighter was eligible to sit for a promotional examination.

I am proposing that any member of the fire department testing for the position of Lieutenant must have a minimum of two and one half years employed as a fulltime firefighter in this town. This would time the opportunity for promotion to match achievement of full pay status in the prior (private) grade.

The same would hold true for Captain position. To test for Captain, the person must hold the position of Lieutenant for two and one half years at the time they sit for the Captain's examination. This combination of 2 ½ years as lieutenant would coincide with attainment of top-step status at that level.

Since the total officer staff would increase to twelve, it stands to reason that there will be sufficient opportunities for advancement to satisfy this new requirement, offer plenty of opportunity to all interested members, and not stunt anyone's ambition.

Shrewsbury Fire Department Strategic Operating Plan, 2002 – 2012

Shrewsbury Fire Department  
10 Year Plan

Tabulation of Building Permits, 1990-2001  
Source: Building Inspector

TYPE OF PERMIT	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
New 1 Family	61	125	288	256	222	157	221	261	269	243	178
New 2 Family	8		2	14	11	10	7	2	13	17	8
New Commercial	4	5	2	4	7	4	6	37	5	14	8
New Industrial	1	1	2	2	2	3	2	2			
	74	131	294	276	242	174	236	302	287	274	194