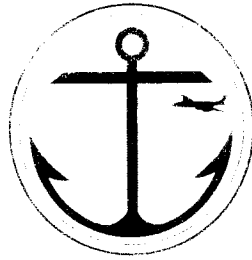


**Municipality
of
Anchorage**



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Rick Mjstrom, Mayor

11/22/99 11:27:35 AM 100101

February 1, 1999

**Internal Audit Report 99-01
Fire Prevention
Anchorage Fire Department**

Introduction. The mission of the Anchorage Fire Department (AFD) Fire Prevention Section is to prevent fires, abate hazardous conditions and safeguard the life and property of the citizens of Anchorage through a competent system of regulations, code enforcement, public education and fire investigations. The Fire Prevention Section is organized in four units as follows:

Code Enforcement: Responsibilities include inspections of property, buildings and fire protection systems for compliance with locally adopted codes and standards for the abatement of fire and life safety hazards. Four inspectors are assigned to this unit.

Plan Review: Responsibilities include regulating the design, construction, use and occupancy of property by comprehensive plan reviews, site inspections, and system testing for compliance with adopted codes and recognized standards. Four inspectors are assigned to this unit.

Public Education: Responsibilities include reducing fire incidents, loss of life and promoting safe behaviors within the Municipality of Anchorage and surrounding areas through public fire safety and injury prevention education. Programs include the Fire Stoppers Program, Learn Not to Burn Program, and other community events. One inspector is assigned to this unit.

Investigation: Responsibilities include the investigation of fires to determine the origin and cause, the identification of product deficiencies, code deficiencies in construction, and unsafe situations. One investigator has been assigned to this unit.

Scope. The objective of this audit was to perform a management audit of the Fire Prevention Section. Specifically, we reviewed the Anchorage Municipal Code (AMC), AFD operating procedures, inspection records, management practices, personnel Position Descriptions (P-1), performance data, and interviewed the Section personnel as required. The audit was conducted in accordance with generally accepted government auditing standards, except for the requirement of an external quality control review. The audit was performed during the period of November through December 1998. The audit was requested by the Assembly.

Overall Evaluation. The efficiency of the Fire Prevention Section could be improved. The AMC did not require routine or periodic fire inspections of multi-unit dwellings, public schools or commercial buildings. However, fire inspections were required for Municipal licensing of child care facilities, pawnshops, secondhand merchants, adult-oriented establishments, circuses, carnivals, teen nightclubs and permits for new construction and building alterations. In addition, discretionary inspections of public schools and multi-unit dwellings were performed as time permitted. Four stand alone databases were maintained for fire inspection information resulting in redundant data entry requirements. Property owner information was not current nor complete. Possible duplication of effort was noted in performing the plan review and inspection function for new construction and alterations of multi-family and commercial buildings. Also P-1's for the Fire Inspectors did not reflect the actual tasks and duties performed. See Attachment A for statistical information.

Management Overall Comments. Management stated, "The internal audit conducted by your division is reasonably accurate and correct. However, in a couple of areas the results may be misleading. I concur with your overall evaluation. The efficiency of the Fire Prevention Section could be improved. There is duplication of effort and redundant data being generated under the current system. The P-1's do need to be upgraded to include all of the duties being performed by the inspectors."

FINDINGS AND RECOMMENDATIONS

1. AMC Requirements for Fire Inspections Need to be Re-evaluated.

- a. **Finding.** The AMC does not require routine or periodic fire inspections. The only inspections required by the AMC are in connection with building permits and the renewal of certain licenses for child care facilities and adult oriented establishments, pawn shops, carnivals and so forth. The following table presents the current AMC requirements:

AMC Reference	AMC Regulations Which Require Fire Inspections
Title 10 Business Licenses and Regulations	<p><u>Municipal Licenses.</u> Fire inspections of premises and structures are required prior to the approval of a municipal license and for renewal. The clerk's office forwards the following Municipal licenses to the AFD for review:</p> <ul style="list-style-type: none"> • Pawnbrokers; • Secondhand Merchants; • Adult-oriented establishments such as adult bookstores, adult motion picture theaters, adult mini-motion picture establishments, physical culture studios, massage parlors, and escort services; • Circuses, carnivals, fairs and other amusements; • Teen nightclub permit and cultural performance venue permit.
Title 16 Health	<p><u>Child Care Center Licenses.</u> The Department Director of Health and Human Services shall request that the fire agency inspect the center where codes are applicable and certify to the director that the facility is in compliance with all applicable codes and regulations prior to the issuance of a license or renewal, or when deemed necessary.</p>
Title 23 Building Codes	<p><u>Building Permits.</u> MOA adopts the Uniform Fire Code, 1994 Edition. The Uniform Fire Code requires inspections for permits - new construction and alteration. The Uniform Fire Code states that the Fire Prevention Bureau shall inspect, as often as necessary, buildings and premises.</p>

Schools, commercial business buildings, and multi-unit dwellings are not required to have routine periodic fire inspections. Discretionary inspections performed in the past have generally been in response to public complaints and AFD's inspection priority. Our review

of fire inspection procedures in other cities revealed that many required routine periodic inspections. We received input from 12 different cities, 7 required periodic inspections ranging from quarterly to every three years. The following table summarizes the requirements for these seven cities.

Fire Prevention - Other Cities	
City Name:	Highlights of Fire Inspection Requirements:
City of Albany	<ul style="list-style-type: none"> • All residential rental units inspected every 30 months. <ul style="list-style-type: none"> ▶ Everyone who owns residential rental property must register with the Rental Dwelling Registry. ▶ Occupancy Permit issued to owner once property is registered and inspected. Effective for 30 months. • Enforced by Code Enforcement Unit, Dept. of Fire and Emergency Services.
Salt Lake City	<ul style="list-style-type: none"> • Housing Inspection Program. Conduct inspection every three years. • Apartments pay an annual licensing and inspection fee.
Honolulu	<ul style="list-style-type: none"> • Annual inspections of public schools. • Inspections every two years of other facilities within jurisdiction. • Annual inspections of airport facilities every year by State. • Ordinance requirements for smoke detectors within high rise residential buildings. Written notice to owner or owners of dwelling units. Owner required to respond within 30 days or be subject to a fire inspection. • Chief authorized to inspect all dwelling units within high rise residential buildings.
Madison	<ul style="list-style-type: none"> • Required to inspect all public buildings (includes buildings with three or more dwelling units) and places of employment. • Fire prevention inspections to be conducted at least once in each non-overlapping 6 month period per calendar year.
Charlotte	<ul style="list-style-type: none"> • Once a year - Hazardous, Institutional, High Rise, Assembly and Residential except one and two dwellings and only interior common areas of dwelling units of multi-family occupancies. • Once every two years - Industrial and Educational (except public schools). • Once every three years - Business, Mercantile, Storage, Churches and Synagogues.
Columbia	<ul style="list-style-type: none"> • Annual inspections of uses requiring fire permits such as assembly occupancies and occupancies that store or distribute flammable or combustible liquids. • All apartments 3 units or more are inspected annually.
Laredo	<ul style="list-style-type: none"> • Quarterly or more often, inspect all mercantile, manufacturing and public buildings.

The following model demonstrates the impact on staffing of the Fire Prevention Section if annual inspections of all multi-unit dwellings and public schools were implemented in addition to mandatory inspections and discretionary inspections currently performed. We computed 1,600 available work hours per employee after deducting holidays, leave and training. We then computed the number of inspectors that would be required under four scenarios of each employee performing one inspection per work day, two inspections per workday, and so forth.

Projected Facilities Per Year		Projected Number of Inspectors Required			
Mandatory Licenses	210	One Inspection Per Day	Two Inspections Per Day	Three Inspections Per Day	Four Inspections Per Day
Schools	90				
Multi-Unit Residential	2,975				
Discretionary Inspections	260				
Total Facilities: 3,535		18	9	6	5

Note: Discretionary Inspections include citizen complaints, assembly permits, commercial facilities, and so forth, based on the last three year's average of actual performance.

- b. **Recommendation.** The Administration should re-evaluate the fire prevention inspection priorities to determine whether routine periodic fire prevention inspections should be performed in Anchorage. The AMC should be revised as necessary.
- c. **Management Comments.** Management stated, "The AFD concurs with this assessment. As a point of fact the AFD has worked, to amend the Uniform Fire Code with local amendments that meet the community's needs. The Fire Code states buildings and premises be inspected as often as necessary to insure compliance with the code. This allows the Fire Department to focus on the specific community target hazards and schedule inspections tailored to community need.

“A good example of this process is the intense inspection effort the AFD focused on hotels and motels in 1997 and 1998. We recognized a problem with smoke detector and exit requirement compliance and initiated a concentrated inspection of all H occupancies. Consequently, we actually closed a couple of the motels until they complied with the code requirements. We have now moved our focus to the R-1 (residential tri-plex) and above occupancies. A pilot program was developed to train fire companies to conduct this type of inspection. Three stations were trained and the pilot program was started. The results were reviewed and the program modified to better meet the needs and whole scale training of the fire companies commenced in January 1999. The company training will be completed and the inspection program will commence in April. It is anticipated that it will take approximately 13 months to complete the review of all R-1 occupancies. The R-1's will then be placed on a three-year rotation cycle, as needed.

“The review of other cities was of great interest to me and generated many questions in my mind. The AFD shall extend that review process to other cities and states to determine the efficiency or effectiveness experienced by the sample as well as other departments.

“The projection of inspection workload is misleading, as it does not incorporate the re-inspections often necessary to get compliance. It is common to require two to four re-inspections per occupancy.

“The AFD agrees there is room for greater efficiency in actually scheduling and performing the inspections. Additionally, there is a need for another support staff person to handle filing and data input thereby freeing the inspectors from that function and allowing more time for inspection duties. The AFD has a program of reviewing all divisions, revising, and updating data in preparation to initiating new performance measures.

- d. **Evaluation of Management Comments.** Management comments were generally responsive to the audit finding and recommendation. Our analysis was based on current

mandatory licenses issued, school facilities, multi-unit residential dwellings and a three-year history of discretionary inspections conducted by the Fire Prevention Section. The discretionary inspections included citizen complaints, assembly permits, commercial facilities, and all other structures that the AFD had self-initiated inspections. Based on the past three years in AFD's Inspection Assignment Database, 298 re-inspections had been performed (i.e., on average approximately 100 re-inspections per year). We considered this factor in our calculation for the projected inspection workloads.

2. **Fire Prevention Activities Could Be Increased.**

- a. **Finding.** Time devoted to fire prevention inspections appeared low. Our analysis of performance data for Fire Inspectors assigned to Code Enforcement revealed they spent an average of 7% of their regular working hours for on-site inspections during 1998 (as of 10/30/98). This did not include travel time, research or report preparations. Adding in an estimated time for research, travel and reporting, we estimate that 28% of the work hours were spent on inspections. According to the Fire Inspector P-1, 38% of their time should be spent on conducting systematic inspections on all occupancies and performing license and permit inspections for other agencies. We were not able to analyze the productivity of the Plan Review unit because detailed records by Fire Inspector were not maintained. However, according to the P-1's, 3% of their time was spent performing code compliance inspections and submitting reports to the Building Safety Division. During the audit we observed Fire Inspectors and the Fire Marshall spending considerable time during the day performing administrative tasks such as data input, filing, responding to phone calls, public relations activities, and other duties within the Section. One Fire Office Associate is assigned to the Fire Prevention Section. This individual provides office support to this Section and is also required to order all uniforms for the AFD among other duties. The following table compares on-site inspection hours to regular work hours for each inspector in the Code Enforcement unit during 1998.

Personnel	Inspection Hours*	Regular Work Hours	Percentage
Inspector A	126.18	1528.00	8.26%
Inspector B	50.95	1531.50	3.33%
Inspector C	46.98	1499.50	3.13%
Inspector D	157.58	1288.50	12.23%
Others (substituted Inspectors)	22.19		
Total	403.88	5847.5	7%

Source: Inspection Assignment Database

* Inspection hours do not include the time spent on paperwork, research, and other related inspection activities.

- b. **Recommendation.** The Fire Chief should reassess the duties and responsibilities of the Fire Prevention Section.
- c. **Management Comments.** Management stated, “The AFD agrees that a review and revision of priorities is necessary relating to the inspection program. Fire prevention involves much more than just inspections, it includes public education, code review, plan review, and fire investigations. Each of these activities is very important in striving to meet the department’s goal of preventing fires, abating hazardous conditions and safeguarding the lives and properties of Anchorage citizens. The performance measure review mentioned above includes a review of all of these activities and establishment of a ranked priority capable of improving the ratio of inspections to hours on duty. There are two comments which must be considered when reviewing inspection performance; one, many inspections will require 3 to 4 visits to attain compliance; two, additional support staff which could free the inspectors from inputting the data into the data base would free time for more inspections.
- d. **Evaluation of Management Comments.** Management comments were responsive to the audit finding and recommendation.

3. Inspection Database Maintenance Not Efficient.

- a. **Finding.** The Fire Prevention Section maintained and utilized four separate computer databases and a manual file to track and manage fire inspections. None of the files were integrated, requiring some of the same data to be entered up to four times. The computer database files were as follows: the public concerns/complaints file, the fire protection systems file, the inspection assignment file, and the master building file. The public concerns/complaints database file and the fire protection systems database file contained information concerning only those two types of reviews and/or inspections, while the “inspection assignment” database was used by the Fire Marshall for tracking all inspections and recording the results of the inspections. Inspection results and owner information was also entered to the “master building” database by each inspector. The manual master building file consisted of a hard copy of all fire inspection reports filed by building location.
- b. **Recommendation.** The Fire Chief should evaluate the need for all of the database files currently used to determine whether redundant files can be eliminated or consolidated into one master file.
- c. **Management Comments.** Management stated, “There is no argument on this subject. The Prevention Division developed a number of “stand-alone” databases to meet specific needs over a several year period. In 1998, we trained a fire department person on Filemaker™ database development. He has developed a plan for integrating all of the individual databases into a single relational database, which will eliminate the multiple database problems and streamline operations. There is a need for additional staff personnel in the Fire Prevention Division.”
- d. **Evaluation of Management Comments.** Management comments were responsive to the audit finding and recommendation.

4. Task of Obtaining and Maintaining Owner Information Difficult.

- a. **Finding.** Obtaining the name of the current property owner was a difficult and time-consuming task. Fire inspectors were required to contact the property owner before conducting an inspection as well as sending the inspection reports after the inspection. However, the master building file database contained only buildings that had already been inspected and did not include the entire population of buildings in Anchorage. In addition, due to the length of time between inspections, especially for facilities that were not inspected on a routine basis, the information was not always current. According to the Fire Inspectors we interviewed, considerable time could be spent trying to find property owners.
- b. **Recommendation.** The AFD should investigate more efficient and reliable alternatives for obtaining property owner information. We understand that there is at least one commercial vendor who can provide the information through the Internet used by other Municipal agencies.
- c. **Management Comments.** Management stated, "The AFD purchased a commercially prepared and maintained web site access for acquisition of this information. The information is now much more readily available. Working with other Municipal departments the AFD is reviewing a new program "CityView™" which will incorporate the owner information into the Municipal database."
- d. **Evaluation of Management Comments.** Management comments were responsive to the audit finding and recommendation.

5. Possible Duplication of Plan Review.

- a. **Finding.** A possible duplication of effort existed in the review of plans for new construction and alterations of multi-family and commercial buildings. Both Fire Prevention and

Building Safety personnel performed reviews and inspections for compliance with adopted codes and recognized standards. At Building Safety, the plan reviews were performed by individuals with engineering backgrounds and degrees in electrical, structural or plumbing/mechanical areas. At the Fire Prevention Section, the plan reviews were performed by four Fire Inspectors on a rotational basis within the Section. According to the classification documentation, the minimum requirements for a Fire Inspector were a high school graduate or the equivalent, and two years as a Fire Fighter II with the AFD or five years with an organized (paid) fire department. Our discussion with both Fire Prevention and Building Safety personnel revealed that these reviews and inspections were somewhat similar except that Building Safety personnel did not review sprinkler systems or alarm systems other than for the electrical components of the alarm systems. However, Building Safety personnel indicated these reviews could be performed by their personnel if required. A report prepared by the Phillips Group and Lamb & Lamb, dated January 1997, also noted a duplication in their flow charting of the plan review process and noted "Duplication and lack of final decision making accountability between Fire, Building Safety and Zoning." Our discussion with Building Safety personnel disclosed that there is no standard way that the fire safety plan reviews are performed through out the country. Some cities utilize separate plan reviews by Fire Department personnel and other cities include the fire safety review and inspections under a public safety plan review process.

The following table summarizes the number of permit applications processed during the last three years:

Types of Permit Applications	1996	1997	1998 (12/8/98)
Multi-Family, New	33	45	79
Commercial, New	67	76	77
Commercial, Alterations	1,028	1,071	1,027
Fire Protection Systems	224	260	166
Total	1,352	1,452	1,349

Source: Building Safety Activity Report (multi-family and commercial permits) and AFD Fire Protection Systems database (fire protection systems permits). More than one plan review and inspection can be performed during the permit process especially when deficiencies are noted.

b. Recommendation. The current practice of separate plan reviews by Building Safety and Fire Prevention personnel should be re-evaluated to determine whether the review could be performed by one section or in a more efficient way as separate reviews.

c. Management Comments. Management stated, "I take particular exception to this section. While it may appear that there is a duplication of effort, the issue is one of technical expertise and focus on a very narrow area.

"Non-Structural Plan Review is a responsibility specifically cited to Fire Departments by Alaska Statute (13 AAC 50.027). If the Anchorage Fire Department stopped doing Fire Plan Review, all of the plans would have to go to the State Fire Marshal's Office, which would create a large impediment to the efficiency of Municipal operation."

d. Evaluation of Management Comments. Management comments were generally responsive to the audit finding and recommendation. 13 AAC 50.027 states that plans and specifications must be submitted by the owner to the state fire marshal for examination and approval. This section also provides that if the state fire marshal determines that it is advisable because of the complexity of plans submitted, the marshal will submit the plans to the Building Official for review.

6. Job Descriptions Did Not Reflect Actual Duties.

- a. **Finding.** The P-1's for Fire Inspectors did not reflect the actual tasks and duties performed. Fire Inspectors were assigned to three separate functions: code enforcement, plan review and public education. The tasks for each function differed accordingly. However, the P-1's were the same for all Fire Inspectors even though the job requirements were different. Our review of past performance disclosed that none of the inspectors were performing in accordance with their P-1's. See Attachment B for the tasks on the P-1's.

We also found that the P-1 for the Office Associate was not current. The last update was in 1988 and specified the supervision of two senior office associates along with other differences. Performance evaluations, job assignments and other personnel actions cannot be accomplished realistically without accurate P-1's.

- b. **Recommendation.** P-1's should be updated to reflect actual tasks for each position.
- c. **Management Comments.** Management stated, "Agreed, the job descriptions need to have additional functions added to reflect the total range of duties performed by the inspector classification."
- d. **Evaluation of Management Comments.** Management comments were responsive to the audit finding and recommendation.

Additional Management Comments. Management stated, "The Fire Prevention Operations Manual is in the process of being re-written to reflect the needed changes to better provide service to the public."

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Fire Prevention
Anchorage Fire Department
February 1, 1999

Discussion With Responsible Officials. The results of this audit were discussed with appropriate Municipal officials on December 23, 1998.

Audit Staff:
Lily Li
Amy McCollum, CIA

ATTACHMENT

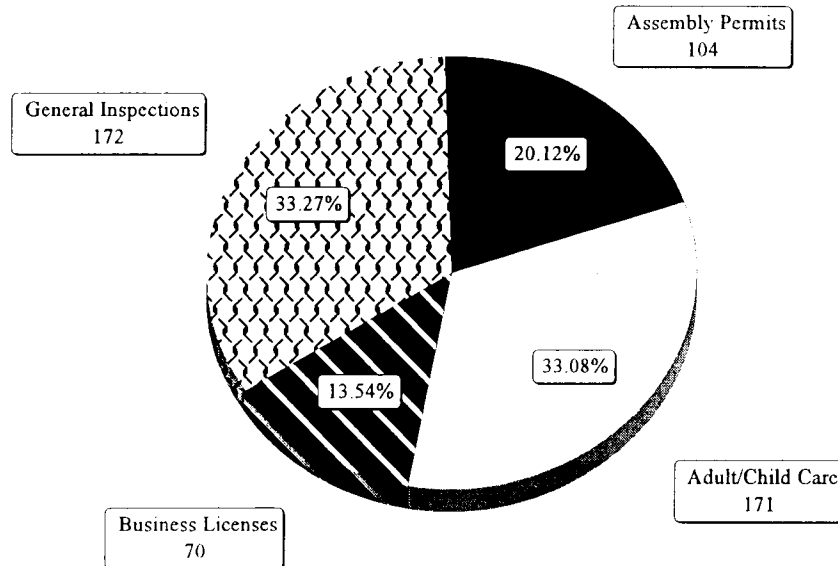
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ATTACHMENT A

Internal Audit Report 99-01, February 1, 1999
Fire Prevention, Anchorage Fire Department

Total Inspections/Reinspections *

1996



Total Inspections - 1996				
	Inspections	Re-Inspections	Total	
Required Inspections:				
Municipal Licenses (pawnbroker, secondhand merchants, adult oriented establishments, etc.)	50	20	70	13.54%
Adult/Child Care	147	24	171	33.08%
Discretionary Inspections:				
Assembly Permits (carnivals, fireworks, haunted houses, etc.)	103	1	104	20.12%
General Inspections (complaint, code compliance, multi-unit dwellings, community right to know, commercial facilities and fire protection systems)	115	57	172	33.26%
Multi-Unit Dwellings (were counted in with General Inspections and not a separate category for the year 1996)	--	--	--	--
TOTAL	415	102	517	100.00%

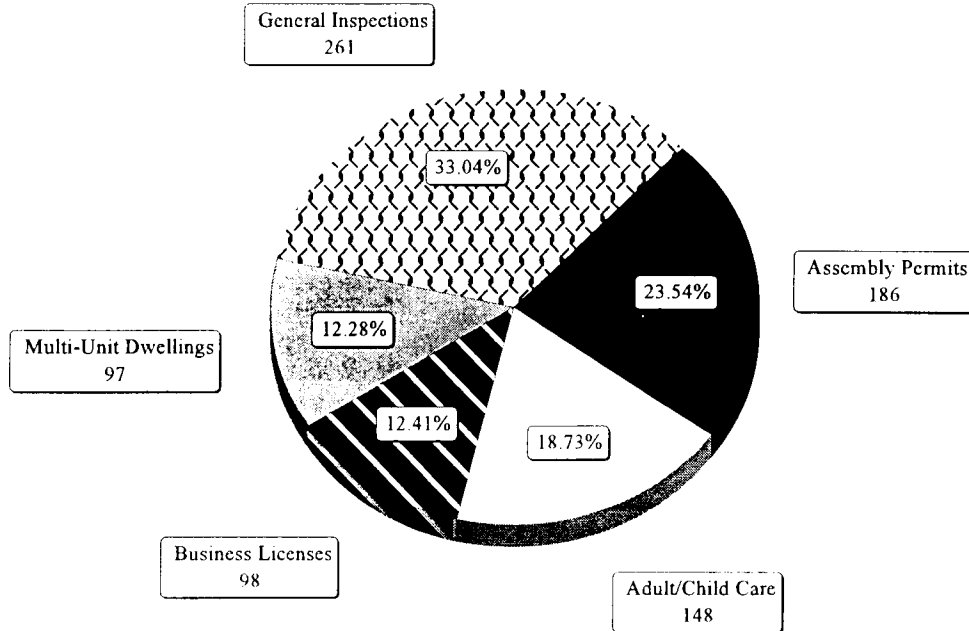
*Does not include inspections for plan reviews. Statistics not maintained.

ATTACHMENT A

Internal Audit Report 99-01, February 1, 1999
Fire Prevention, Anchorage Fire Department

Total Inspections/Reinspections *

1997



Total Inspections - 1997				
	Inspections	Re-inspections	Total	
Required Inspections:				
Municipal Licenses (pawnbrokers, secondhand merchants, adult oriented establishments, etc.)	97	1	98	12.41%
Adult/Child Care	132	16	148	18.73%
Discretionary Inspections:				
Assembly Permits (carnivals, fireworks, haunted houses, etc.)	186	0	186	23.54%
General Inspections (complaint, code compliance, community right to know, commercial facilities and fire protection systems)	230	31	261	33.04%
Multi-Unit Dwellings	59	38	97	12.28%
TOTAL	704	86	790	100.00%

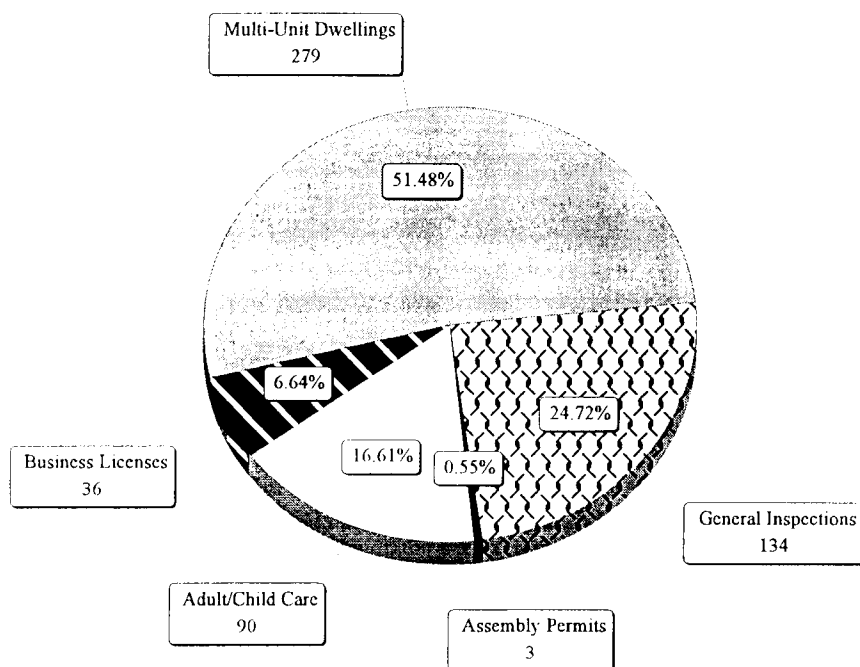
*Does not include inspections for plan reviews. Statistics not maintained.

ATTACHMENT A

Internal Audit Report 99-01, February 1, 1999
Fire Prevention, Anchorage Fire Department

Total Inspections/Reinspections *

1998 (as of 10/30/98)



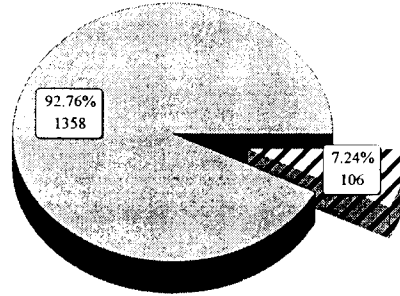
Total Inspections - 1998 (as of 10/30/98)				
	Inspections	Re-inspections	Total	
Required Inspections:				
Municipal Licenses (pawnbrokers, secondhand merchants, adult oriented establishments, etc.)	33	3	36	6.64%
Adult/Child Care	72	18	90	16.60%
Discretionary Inspections:				
Assembly Permits (carnivals, fireworks, haunted houses, etc.)	3	0	3	.55%
General Inspections (complaint, code compliance, community right to know, and commercial facilities, fire protection systems and educational facilities)	127	7	134	24.73%
Multi-Unit Dwellings	197	82	279	51.48%
TOTAL	432	110	542	100.00%

*Does not include inspections for plan reviews. Statistics not maintained.

ATTACHMENT A

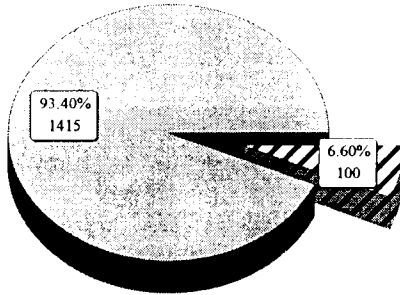
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Percentage of Fire Incidents Investigated
1996



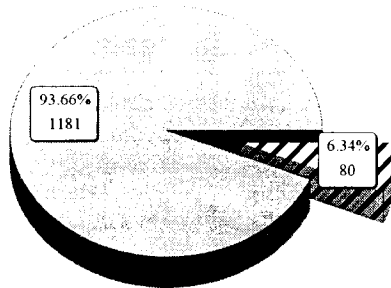
□ Total Fire Incidents = 1464
▨ Fire Investigations = 106

Percentage of Fire Incidents Investigated
1997



□ Total Fire Incidents = 1515
▨ Fire Investigations = 100

Percentage of Fire Incidents Investigated
1998 (as of 10/30/98)



□ Total Fire Incidents = 1261
▨ Fire Investigations = 80

ATTACHMENT A

Internal Audit Report 99-01, February 1, 1999
Fire Prevention, Anchorage Fire Department

ATTACHMENT B

ATTACHMENT B

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Fire Prevention, Anchorage Fire Department

Position Description Tasks for Fire Inspectors	
Task	Percentage of Time
Conduct systematic inspections on all occupancies, accomplish certificate of occupancy inspections and perform license and permit inspections for other agencies.	38%
Perform code analysis, code interpretation, and develop and submit code amendments.	4%
Prepare and present appeal cases to the Building Board of Appeals and prepare and present citation cases to district court.	2%
Develop and implement various inspection/prevention programs.	3%
Provide public education lectures and demonstrations.	8%
Assist in creation of and establishing administrative policies, design and develop technical manuals, field manuals, PPI (Policy, Procedure & Instruction) and forms.	2%
Research codes, standards and technical journals, and develop code interpretations.	6%
Issue permits, stop work and non-occupancy orders, and verify code compliance.	1%
Author correspondence to the business and professional community, file and record division documents and forms.	12%
Provide and receive training.	5%
Provide code consulting and code conferences with public and the different professional communities.	5%
Conduct/witness final approval test for fire protection systems.	5%
Respond to inspection referrals from the suppression division.	3%
Perform code compliance inspections and submit detailed reports to Building Safety Department.	3%
Provide fire investigation training, assistance and coordinate routing of reports and evidence to appropriate authorities.	3%
Total	100.00%

ATTACHMENT B

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Fire Prevention, Anchorage Fire Department