



March 3, 2016

TO: Brian Kischnick, City Manager

FROM: David Roberts, Fire Chief

RE: Fire Department and EMS 2015 Annual Report

Enclosed for review is the annual report for the fire department and emergency medical service provider for calendar year 2015. Information contained herein is listed in spreadsheet format by category, and documents various activities and performance indicators.

Overview

- Fire incidents increased by 16.78% to 167, while non fire incidents decreased by 10.11% to 934.
- The total number of incidents to which the fire department responded, however, decreased by 6.85% to 1,101.
- The number of fire-related casualties decreased by 33.33% to 8.
- Estimated property value saved from fire was \$158.5M or 98.15% of property involved.
- Total activities performed increased by 0.68% overall to 18,869, and the number of hours logged increased by 10.47% to 32,616.
- The number of volunteer firefighters decreased by 1.92% to 153.
- False alarm activations decreased by 17.63% to 444, but accounted for 42.45% of total incidents.
- Requests for emergency medical service totaled 7,840 for advanced life support ambulance and 4,872 for paramedic first responder.

Noteworthy

- The fire department celebrated its 75 anniversary in conjunction with the City's 60th anniversary in 2015. The Troy Fire Department was established in 1940. Troy Township became the City of Troy in 1955.
- Two volunteer firefighters were promoted/hired as career Staff Technicians on March 30, 2015, bringing the number of uniform career staff members to 11.
- On September 25, 2015, Fire Chief William Nelson retired after 40 years of service with the fire department and nearly 22 years as the fire chief.
- Planning continued for the construction of a new Station 4 to replace the current station which was built in 1975. The architectural firm, Redstone, was selected to design the new station. In 2016, a construction manager at risk will be selected, and together with

the architect and the City, will design and build the new fire station, expected to be completed in the fall of 2017.

- Discussions continued between city management and the volunteer firefighter incentive committee to finalize a formal Volunteer Firefighter Incentive Plan and Trust. It is expected that final documentation will be accepted and approved in 2016.
- As indicated above and as listed in this report, over \$224M of property value was endangered by fire in 2015. Under \$1.86M was lost by fire. Over \$158M worth of property was saved by firefighting efforts. It can be reasoned that this equates to a fire department operating efficiency of 98.15% at fires.
- There was no loss of life due to fire in 2015.
- The declining number of volunteer firefighters is a nationwide trend in the fire service and not specific to Troy. The fire department is making efforts to recruit and retain volunteers by various means and will continue to do so in the future in an effort to sustain the department.
- Alliance Mobile Health continued to provide emergency medical service (EMS) to the community in an efficient and cost effective method through both paramedic first responder (PFR) and advanced life support (ALS) ambulance service.

The fire department continues to provide efficient fire and rescue services to the community through a cost-effective combination department comprised primarily of volunteer firefighters. Comparable career fire departments typically cost upwards of three times that of the Troy Fire Department. The fire department's proactive approach to fire prevention principles and practices helps to reduce the risk of fire in our community. This philosophy is the basis for an affordable, well equipped, and well trained fire department.

I would like to take this opportunity to thank the Troy City Council, city management, and the other city departments with whom we work, for their continued support of the fire department. I would also like to recognize and thank the our department members, both volunteer and career, for their dedication and commitment, as well as the Troy Firefighters Women's Auxiliary and the Troy Fire Explorer Post 911 for their continued dedication and support of the department.



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**TROY =
= FIRE**

<u>Category</u>	<u>Count</u>	<u>Percent of Total Incidents</u>	<u>Previous Year</u>	<u>Change</u>
Total Fire Incidents	167	15.17%	143	16.78%
Total Non Fire Incidents	934	84.83%	1039	-10.11%
Total Incidents	1101	100.00%	1182	-6.85%

<u>Fire Incidents</u>	<u>Count</u>	<u>Percent of Total Fires</u>	<u>Previous Year</u>	<u>Change</u>
Structure Fires	79	47.31%	55	43.64%
Vehicle Fires	32	19.16%	44	-27.27%
Grass Fires	25	14.97%	14	78.57%
Refuse Fires	26	15.57%	19	36.84%
Other Fires	5	2.99%	11	-54.55%
Total Fire Incidents	167	100.00%	143	16.78%

<u>Non Fire Incidents</u>	<u>Count</u>	<u>Percent of Total Non Fires</u>	<u>Previous Year</u>	<u>Change</u>
Overpressure/Explosion	7	0.75%	2	250.00%
Rescue / Extrication	47	5.03%	64	-26.56%
Hazardous Conditions *	148	15.85%	196	-24.49%
Public Service	38	4.07%	44	-13.64%
Good Intent **	241	25.80%	188	28.19%
Alarm Activation Unintentional	247	26.45%	362	-31.77%
Alarm System Malfunction	197	21.09%	176	11.93%
Weather Standby	7	0.75%	6	16.67%
Other Non Fire	2	0.21%	1	100.00%
Total Non Fire Incidents	934	100.00%	1039	-10.11%

* Includes spills or leaks with no fire; excess heat; arcing wires; and chemical emergencies

** Includes smoke scares; wrong locations; steam mistaken for smoke; and controlled burning

Data throughout this report obtained from Oakland County Fire Records Management System or Troy BS&A



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<u>Structure Fires by Occupancy*</u>	<u>Count</u>	<u>Percent of Structure Fires</u>	<u>Previous Year</u>	<u>Change</u>
Apartments	16	20.25%	14	14.29%
Educational	2	2.53%	1	100.00%
Industrial	5	6.33%	3	66.67%
Institutional	0	0.00%	0	0.00%
Motel/Hotel	2	2.53%	0	200.00%
Office	2	2.53%	2	0.00%
Other	2	2.53%	0	200.00%
Public Assembly	3	3.80%	2	50.00%
Single Family Dwelling	39	49.37%	21	85.71%
Storage	4	5.06%	3	33.33%
Stores/Sales	4	5.06%	9	-55.56%
Total Occupancies	79	100.00%	55	43.64%

<u>Building Fires by Cause**</u>	<u>Count</u>	<u>Percent of Structure Fires</u>	<u>Previous Year***</u>	<u>Change***</u>
Act of Nature	1	1.82%	N/A	N/A
Cooking	6	10.91%	N/A	N/A
Equipment Failure	7	12.73%	N/A	N/A
Intentional	0	0.00%	N/A	N/A
Other	4	7.27%	N/A	N/A
Under Investigation	2	3.64%	N/A	N/A
Undetermined	4	7.27%	N/A	N/A
Unintentional	31	56.36%	N/A	N/A
Total Causes	55	100.00%		

*Includes contained fires in buildings such as cooking and chimney

**Includes uncontained fires involving buildings with structural damage/loss

***N/A due to previous archaic & inconsistent data retrieval methods discovered within FRMS for this category



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<u>Total Casualties</u>	<u>Number</u>	<u>Percent</u>	<u>Previous Year</u>	<u>Previous Percent</u>	<u>Change</u>
Civilian Injury	2	25.00%	5	41.67%	-60.00%
Civilian Death	0	0.00%	2	16.67%	-100.00%
Firefighter Injury	6	75.00%	5	41.67%	20.00%
Firefighter Death	0	0.00%	0	0.00%	0.00%
Total Casualties	8	100.00%	12	100.00%	-33.33%

<u>Total Estimated Building Fire Loss</u>	<u>Amount</u>	<u>Percent</u>	<u>Previous Year</u>	<u>Previous Percent*</u>	<u>Change*</u>
Building Value	\$160,359,167.00	71.43%	\$98,518,018.00	71.43%	62.77%
Content Value	\$64,143,666.80	28.57%	\$39,407,207.20	28.57%	62.77%
Total Value	\$224,502,833.80	100.00%	\$137,925,225.20	100.00%	62.77%
Building Loss	\$1,154,140.00	0.72%	\$1,223,201.00	1.24%	-5.65%
Contents Loss	\$704,070.00	1.10%	\$734,367.00	1.86%	-4.13%
Total Loss	\$1,858,210.00	1.82%	\$1,957,568.00	3.11%	-5.08%
Total Saved	\$158,500,957.00	98.18%	\$96,560,450.00	96.89%	64.15%
Operational Efficiency		98.18%		96.89%	

* Similarities are a mathematical coincidence.



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Response Time Analysis

<u>Fire Dept. Emergency Response *</u>	<u>Count</u>	<u>Cumulative Response</u>	<u>Percent</u>	<u>Cumulative Percent</u>
0 - 1 Minute	2	2	0.36%	0.36%
1 - 2 Minutes	7	9	1.26%	1.62%
2 - 3 Minutes	17	26	3.07%	4.69%
3 - 4 Minutes	48	74	8.66%	13.36%
4 - 5 Minutes	59	133	10.65%	24.01%
5 - 6 Minutes	77	210	13.90%	37.91%
6 - 7 Minutes	55	265	9.93%	47.83%
7 - 8 Minutes	67	332	12.09%	59.93%
8 - 9 Minutes	63	395	11.37%	71.30%
9 - 10 Minutes	50	445	9.03%	80.32%
10 + Minutes	109	554	19.68%	100.00%
Total Emergency Responses	554		50.32% of total responses	
Total Nonemergency Responses	547		49.68% of total responses	
Total Responses	1101			

** Dispatch to arrival as recorded by the dispatch center for apparatus response prior to downgrade.*

<u>Dispatch Emergency Processing **</u>	<u>Count</u>	<u>Cumulative Response</u>	<u>Percent</u>	<u>Cumulative Percent</u>
0 - 1 Minute	260	260	43.33%	43.33%
1 - 2 Minutes	231	491	38.50%	81.83%
2 - 3 Minutes	61	552	10.17%	92.00%
3 - 4 Minutes	22	574	3.67%	95.67%
4 - 5 Minutes	13	587	2.17%	97.83%
5 - 6 Minutes	5	592	0.83%	98.67%
6 - 7 Minutes	2	594	0.33%	99.00%
7 - 8 Minutes	2	596	0.33%	99.33%
8 - 9 Minutes	0	596	0.00%	99.33%
9 - 10 Minutes	1	597	0.17%	99.50%
10 + Minutes	3	600	0.50%	100.00%
Total Emergency Incidents	600			

*** Receipt of call to dispatch as recorded by the dispatch center. May include cancellations after dispatch or downgrade prior to arrival.*



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<u>Activities Performed</u>	<u>Count</u>	<u>Percent</u>	<u>Previous Year</u>	<u>Change</u>
Fire Station Service Requests	539	36.74%	854	-36.89%
Fire Investigations	51	3.48%	42	21.43%
In-Service Training Provided	773	52.69%	475	62.74%
Specialty Team Training Provided	53	3.61%	89	-40.45%
Fire Academy Training Provided *	51	3.48%	51	0.00%
Subtotal	1,467	100.00%	1,511	-2.91%
Plans Reviewed	807	4.64%	887	-9.02%
Permits Issued	547	3.14%	595	-8.07%
Inspections	2,429	13.96%	2,724	-10.83%
Violations Issued	2,087	11.99%	1,462	42.75%
Violations Cleared	1,472	8.46%	863	70.57%
Hydrant Flow Tests Conducted	29	0.17%	39	-25.64%
Public Education Programs	72	0.41%	118	-38.98%
Public Education Participants	8,389	48.21%	8,550	-1.88%
HAPIS Computer Entries	47	0.27%	701	-93.30%
Alarms Registered **	884	5.08%	853	3.63%
Knox Box Updates	639	3.67%	438	N/A
Subtotal	17,402	100.00%	17,230	1.00%
Total Activities	18,869		18,741	0.68%

* North Oakland Fire Academy

** Paid registrations

<u>Activity Time</u>	<u>Hours</u>	<u>Percent</u>	<u>Previous Year</u>	<u>Change</u>
Administrative ***	1,720.84	5.28%	2,289.10	-24.82%
Fire Prevention ***	6,881.42	21.10%	5,538.05	24.26%
Supportive / Other ***	5,913.92	18.13%	5,408.04	9.35%
Training ****	18,100.00	55.49%	16,291.00	11.10%
Total Hours	32,616.18	100.00%	29,526.19	10.47%

*** Career staff-hours only. Does not include leave time.

**** Includes staff hours + volunteer hours



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Staffing

<u>Volunteer</u>	<u>Station 1</u>	<u>Station 2</u>	<u>Station 3</u>	<u>Station 4</u>	<u>Station 5</u>	<u>Station 6</u>	<u>Total</u>	<u>Change</u>
2011	29	27	28	31	29	24	168	NA
2012	27	27	26	29	31	25	165	-1.79%
2013	25	27	24	27	29	27	159	-3.64%
2014	25	24	25	27	29	26	156	-1.89%
2015	25	23	24	26	28	27	153	-1.92%
<u>5 Yr. Avg.</u>	21.2	21.0	20.6	22.8	23.6	20.4	160.2	-1.85%
<u>2 Yr. Avg.</u>	25.0	25.5	24.5	27.0	29.0	26.5	154.5	-1.90%

<u>Career</u>	<u>Chief</u>	<u>Assistant Chief</u>	<u>Staff Lieutenant</u>	<u>Staff Technician</u>	<u>Secretary</u>	<u>Total</u>	<u>Change</u>
2011	1	2	6	2	1	12	NA
2012	1	1	5	3	1	11	-8.33%
2013	1	1	5	3	1	11	0.00%
2014	1	1	4	3	1	10	-9.09%
2015	1	1	4	5	1	12	20.00%
<u>5 Yr. Avg.</u>	0.8	1.0	4.0	2.2	1.0	11.2	0.52%
<u>2 Yr. Avg.</u>	1.0	1.0	4.5	3.0	1.0	11.0	5.45%



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<u>Station</u>	<u>Incident Category</u>	<u>Incident Count</u>	<u>Percent of Category</u>	<u>Percent of Total Count</u>	<u>Previous Year Count</u>	<u>Change</u>
1	Fire	32	19.16%	2.91%	28	14.29%
	Rescue/Extrication	11	23.40%	1.00%	5	120.00%
	False Alarm	66	14.86%	5.99%	84	-21.43%
	All Other	66	14.90%	5.99%	85	-22.35%
	Sub Total	175	15.89%	15.89%	202	-13.37%
2	Fire	18	10.78%	1.63%	14	28.57%
	Rescue/Extrication	3	6.38%	0.27%	4	-25.00%
	False Alarm	37	8.33%	3.36%	58	-36.21%
	All Other	71	16.03%	6.45%	61	16.39%
	Sub Total	129	11.72%	11.72%	137	-5.84%
3	Fire	44	26.35%	4.00%	33	33.33%
	Rescue/Extrication	12	25.53%	1.09%	13	-7.69%
	False Alarm	126	28.38%	11.44%	118	6.78%
	All Other	95	21.44%	8.63%	85	11.76%
	Sub Total	277	25.16%	25.16%	249	11.24%
4	Fire	26	15.57%	2.36%	34	-23.53%
	Rescue/Extrication	13	27.66%	1.18%	35	-62.86%
	False Alarm	105	23.65%	9.54%	136	-22.79%
	All Other	64	14.45%	5.81%	77	-16.88%
	Sub Total	208	18.89%	18.89%	282	-26.24%
5	Fire	25	14.97%	2.27%	10	150.00%
	Rescue/Extrication	2	4.26%	0.18%	3	-33.33%
	False Alarm	29	6.53%	2.63%	46	-36.96%
	All Other	30	6.77%	2.72%	45	-33.33%
	Sub Total	86	7.81%	7.81%	104	-17.31%
6	Fire	15	8.98%	1.36%	17	-11.76%
	Rescue/Extrication	6	12.77%	0.54%	4	50.00%
	False Alarm	52	11.71%	4.72%	53	-1.89%
	All Other	74	16.70%	6.72%	53	39.62%
	Sub Total	147	13.35%	13.35%	127	15.75%
8 *	Fire	7	4.19%	0.64%	7	0.00%
	Rescue/Extrication	0	0.00%	0.00%	0	0.00%
	False Alarm	29	6.53%	2.63%	43	-32.56%
	All Other	43	9.71%	3.91%	31	38.71%
	Sub Total	79	7.18%	7.18%	81	-2.47%
Total		1101	100.00%	100.00%	1182	-6.85%

* Administrative staff followup; investigations; duty officer response.



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Supplemental

<u>Valid Alarm Activations</u>	<u>Count</u>	<u>Percent of Total Incidents</u>	<u>Previous Year</u>	<u>Change</u>
Cooking Related	26	2.39%	34	-23.53%
Fire	4	0.37%	5	-20.00%
Smoke	10	0.92%	5	100.00%
Overheat	0	0.00%	0	0.00%
Electrical	0	0.00%	0	0.00%
Total Valid Alarms	40	3.82% of Total Incidents	44	-9.09%
		8.26% of Total Alarm Activations		

<u>False Alarm Activations</u>	<u>Count</u>	<u>Percent of Total Incidents</u>	<u>Previous Year</u>	<u>Change</u>
Unintentional	247	22.66%	359	-31.20%
Malfunction	197	18.07%	176	11.93%
Other	0	0.00%	3	-300.00%
Malicious	0	0.00%	1	-100.00%
Total False Alarms	444	42.45% of Total Incidents	539	-17.63%

<u>Fires With Significant Loss *</u>	<u>Date</u>	<u>Resources</u>	<u>Alarms</u>	<u>Estimated Loss**</u>	<u>Summary</u>
4755 Rochester Rd.	2/6/2015	Sta. 2; Sta. 1; R4; AT3	1	\$150,000.00	Commerical/Industrial
6544 Merrick Dr.	4/28/2015	Sta. 2; Sta. 6; Sta. 5; R4; AT3	2	\$242,905.00	Single Family Residential
615 Trombley St.	9/26/2015	Sta. 1; Sta. 3; Sta. 4	2	\$230,500.00	Single Family Residential
5240 Dayton Dr.	10/7/2015	Sta. 5; Sta. 2; R4; AT3	1	\$169,625.00	Single Family Residential
1300 Coolidge Hwy.	11/4/2015	Sta. 3; Sta. 6; Sta. 1; R4	2	\$185,000.00	Commercial/Storage

<u>Mutual Aid</u>	<u>Count</u>	<u>Provided</u>	<u>Received</u>	<u>Type</u>
Auburn Hills	4	4		Assist/Fill-In
Bloomfield Hills	3	3		Assist/Fill-In
Clawson	1		1	Fill-in
Clawson	2	2		Assist
Rochester Hills	22	22		Assist/Fill-In

* \$100,000.00 or greater

**Estimated Replacement Cost of Real & Personal Property



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**Alliance
Mobile
Health**

Advanced Life Support (ALS)*

Priority 1 (emergent) Requests	3,903
Priority 3 (non emergent) Requests	3,937
Total Ambulance Requests	7,840

Cancelations, Refusals, No Patients	3,011
Transports	4,828

Priority 1 Responses	3,903
Calls Cancelled Enroute	405
Exceptions Affecting Response Times	425
Weather	99
Construction	88
Location Change	61
Second Ambulance Response	7
Unsecure Scene	31
Priority Change	99
Expressway Response	17
Other	23

Exceptions & Cancellations	830
Valid Priority 1 Responses	3,073
Responses Over 8 minutes	264
Responses Under 8 minutes	2,809
Response Time Compliance of 8 min. of Less	92%
Average Priority 1 Response Time	0:05:58
Average Priority 3 Response Time	0:11:02

Patient Condition at Time of Transport	
Critical	37
Unstable	673
Stable	4,118
	4,829

Evidentiary Blood Draw	149
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Paramedic First Responder (PFR)*

Priority 1 (emergent) Requests	3,843
Priority 3 (non emergent) Requests	1,030
Total PFR Requests	4,872

Cancelations	646
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Priority 1 Responses	3,843
Calls Cancelled Enroute	435
Exceptions Affecting Response Times	431
Weather	122
Construction	110
Location Change	41
Second Unit Response	14
Unsecure Scene	33
Priority Change	76
Expressway Response	33
Other	2

Exceptions & Cancellations	868
Valid Priority 1 Responses	2,977
Responses Over 5 minutes	291
Responses Under 5 minutes	2,986
Response Time Compliance of 5 min. of Less	91%
Average Priority 1 Response Time	0:03:53
Average Priority 3 Response Time	0:07:12

Carbon Monoxide Checks	62
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*Emergency Medical Services provided under contract by **Alliance Mobile Health**. Information provided by AMH.