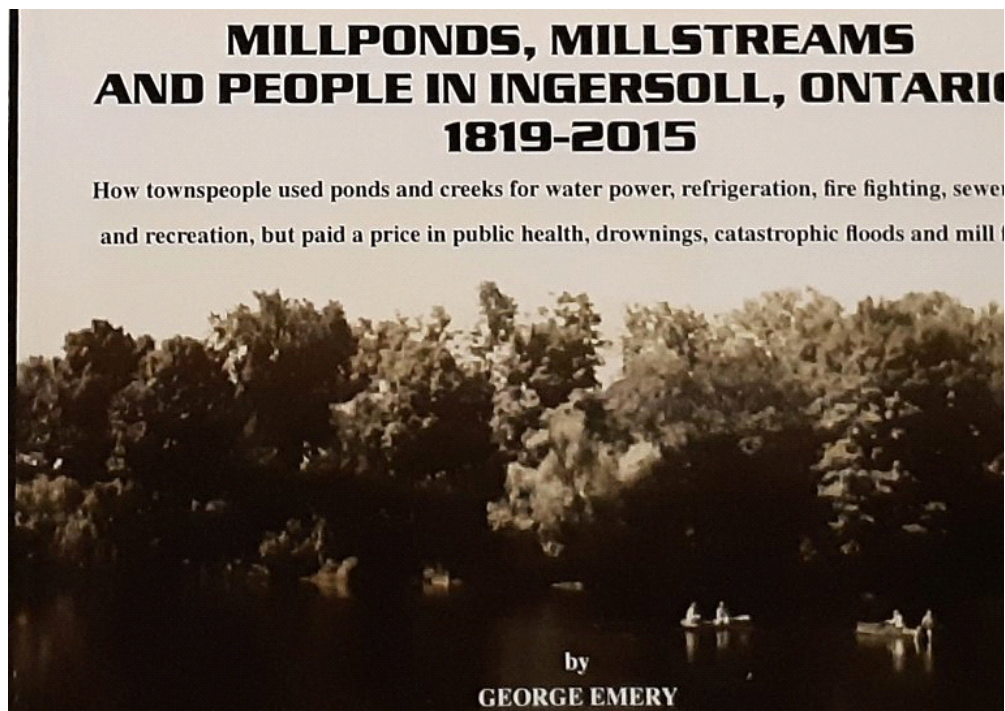


An excerpt from:

**Millponds, Millstreams and People in Ingersoll, Ontario, 1819-2015:**

**How Townspeople Used Ponds and Creeks for Water Power, Refrigeration, Fire Fighting, Sewerage, and Recreation, but Paid a Price in Public Health, Drownings, Catastrophic Floods and Mill Fires**

by Emery, George Neil, 1941-



### **Chapter 3. INGERSOLL'S PONDS AND CREEKS FOR FIRE FIGHTING AND SEWERAGE**

This Chapter explores Ingersoll's millponds and creeks as assets for fighting fires and sewage disposal. Part I presents background information for Ingersoll fire fighting during the years 1852-90 — the reliability of water supply from ponds and streams, maps in commercial *Fire Insurance Plans*, insurance rates set by the *Fire Insurance Underwriters' Association*, and the problem of arson. Part II treats millponds and fire fighting in the era of hand-pump fire engines (1852-73). Part III examines fire-fighting during the era of the *steamer* and the chemical fire engine (new technology, 1874-89) and fire-limit by-laws that banished wooden buildings from the fire-damaged town

core. In 1890 the town purchased a waterworks for fire fighting and domestic consumption, drawing water from springs outside the town. Ergo, Ingersoll's ponds and creeks ceased to be the water source for its fire service. Part IV explores the role of millponds, creeks, and the Thames River for sewerage during the waterworks regime. A chapter postscript surveys the fire service during the era of the waterworks. The chapter closes with a summary of its findings.

## PART I: BACKGROUND INFORMATION FOR FIRE FIGHTING IN INGERSOLL

### The Adequacy of Millpond Water Supply for Fire Fighting.

19th century Ingersoll was blessed with water, the principal weapon against fire. In 1881 the *London Advertiser* noted Ingersoll's "abundance of ponds and streams in every direction, and the only question for serious consideration [was] how to get it to a fire quick enough." The actual state of affairs was more complex. The Town's First Ward, on north side of the Thames River, had no ponds. In December, 1874, a "scarcity of water" threatened everywhere: "all our streams are very low, many wells dry, and cisterns containing but a poor supply." In July, 1876, Carroll's Pond and Partlo's Pond, "right in the most densely populated part of the town, [were] almost dry, and animal matter, weeds, and other filth lie exposed to the rays of the sun, and their foul and pestilential odours are blown over the surrounding neighbourhood." Partlo's millpond overflow stream was "dry in summer" and, for two major fires in February and May of 1878, water levels at the St. Andrew's Street Bridge on Hall's Creek were too low to operate the Fire Brigade's steamer fire engine. For two or three weeks during the summer months, ponds were routinely drained to flush out muck and debris, for weed control, or for repairs and modifications at the dam-site. Thus in July, 1888, fire struck M.T. Buchanan's driving barn right after he had drained his pond to "sweeten the water."

In the summer months, ponds could become choked with weeds. The veteran mill owner, James Smith, had "never seen a pond that scum would not form on." Examples of surface-floating vegetation — by their 21<sup>st</sup> century names — were algae (pond scum), duckweed, watermeal, water hyacinth, and water lettuce. Submerged plants included milfoil, hydrillia, pondweed, coontail, watershield, water lily, and naiad. Remedies proposed in Ingersoll, with varying degrees of success, included a simple draining and refilling of the pond; draining the pond, raking out its weeds, dredging out its muck, and carting away the detritus; and installing a chute to increase movement on the pond's surface (*flushing*). In the event, whenever a pond was drained for weed control or silt flushing, Ingersoll's water supply for fire fighting was compromised.

### Goad Fire Insurance Plans, 1876-1935.

During the years 1876-1910, Charles E. Goad of Montreal prepared and copyrighted *fire insurance plans* for individual cities and towns, for sale to any insurance company. Each *plan* comprised a set of maps: a general map of the town and detailed maps of districts within the town. Goad revised the plans for a given municipality every three years. He occasionally sold outright to customers; more commonly, he sold subscriptions, granting the client access to a given plan on long-

term loan. The subscriber was obliged to return the plan once it was no longer usable. Goad and his successors then destroyed the obsolete plan. Thus plans for many communities became extinct. After Goad's death, his three sons produced plans exclusively for the *Fire Insurance Underwriters Association* (see below). The *Underwriters' Association* itself produced the plans during the years 1917-35.

Insurance-plan maps for Ingersoll are extant for the following years: 1882 (revised from 1879), 1904 (revised from 1885), 1913, 1924 (revised from 1913), 1928 (revised from 1913), and 1932 (revised from 1913). The maps use detailed colour drawings and symbols to document the construction material of buildings; their height and occupancy; the fire limits established by municipal by-laws, and the location of sources of water — the ponds, creeks, and the river. Effectively, they mapped the physical characteristics of the Ingersoll properties to be insured. In the process, they became a key resource for planning a given community's fire service.

#### The *Canadian Fire Underwriters' Association*, 1883-1935.

Agents of fire insurance companies negotiated with owners of property to set the price of fire insurance during the 1870s. Agents were free to vary the price according to their perceived risk of fire for the buildings that they insured. Competition among agents tended to lower the price of insurance — in fact, too much so to suit the companies. Their remedy was a cartel — the *Canadian Fire Underwriters' Association*, founded in 1883 by 30 fire insurance companies doing business in Ontario. The companies agreed to abide by minimum fire insurance rates which the *Association* set for individual towns. For the purpose, the *Association* ranked towns into five classes, according "the adequacy of their firefighting equipment."

- A: Preferred
- B: With first class *appliances* and *waterworks*
- C: With waterworks
- D: With *steamers* but no waterworks
- E: Hand engines or no fire protection (commercial properties only)

The 1883 rating scheme ignored the fire risk of the properties to be insured — effectively a town core stuffed with rookeries rated the same as a town core of bricked buildings. Similarly, the scheme gave "no incentive to owners to improve the level of safety in their properties — the minimum tariff made no distinction between

a building that was two stories tall with ample self-contained fire protection and a second building that stood five stories tall with no protection." Thus in 1885 the Association issued a separate minimum tariff for "industries with special risks, such as foundries and planing mills." In 1901 the underwriters provided for rates on an individual basis: rating a building as it approximated to or departed from the "standards of its class." In the event, agents of the insurance companies had always been free to set rates above the minimum for high-risk properties.

The Association's first ratings placed 13 towns in Class C and 41 towns, including Ingersoll, in Class D. In 1887 the underwriters raised Ingersoll from D to C, which meant "a saving of ten percent on all insurance in the town, amounting to \$1,000 per year" — a reward for the town's purchase of a chemical fire engine, which was deemed to compensate for the town's lack of a waterworks.

The Association was a powerful influence on Ingersoll's fire service. It determined what the brigade required to place the town in a higher class (scaled E through A). Through regular inspections, it flagged deficiencies that required remedy if the town was to remain in its current class. In 1887, for example, the Underwriters made Ingersoll's C classification conditional on the town having an engineer of the Silsby steamer — a fire engine — sleep in the engine house. In 1889 Council's *Fire, Water & Gas Committee* recommended "that a suitable horse be purchased for the use of the chemical engine in drawing it to and from fires, deeming it to be the cheapest and most efficient method of meeting the requirements of the Underwriters' Association." In 1898 Robert Howe, Inspector of the Fire Underwriters' Association, found that "five men required to sleep in fire station, only two there now, three sleep within fifty yards and three others within one hundred yards. The chief of the fire brigade is not a fully paid man, as is required by the standard. There are only four instead of five full paid firemen."

#### Incendiaries in Ingersoll.

Arson was tricky to detect in a town chock-full of combustible buildings and contents. Where an obvious explanation for a fire was lacking, the townspeople blamed an incendiary. In May, 1887, fire destroyed Smith's mill, giving him a loss of \$15,000, of which \$2,000 was insured; the fire "had broken out in the one-story engine room on the east side; it is said that the fire was the hellish work of an incendiary as the engine had not been in use for some time and there was no fire on the premises." If a "fire bug" was involved, then he (or she) might have been a deranged individual, a person out to settle scores, or young lads intent on mischief. For an owner of a well-insured business, a fire could be convenient way to rebuild his workplace with new materials and more efficient machinery. "We can call to mind within the past few years," mused an editorial in the *Chronicle* in 1889, "a half dozen fires which, there is every reason to believe, were caused by the owners to obtain the insurance.

Two fires suffered by M.T. Buchanan evidenced contrasting aspects of the arson problem. In July, 1888, fire had destroyed "a high brick building" which Buchanan used as a "driving barn." Buchanan's nine horses were saved, but he lost all ten of his

"delivery wagons, buggies, etc." As Buchanan testified at a coroner's investigation into the cause of a fire, he had heard street talk of an attempt to injure one of his horses, on which "considerable betting had been done." For that reason, he and his brother had placed two armed men in the stables to guard the horses overnight. What he never had expected was a fire. A formal investigation judged that the fire was the work of an unknown incendiary, although a witness had identified one W.B. Wilson as having said, "I'll have that man out of here."

A second fire, in November, 1895, destroyed Buchanan's *Water-Street Works*: "The fire originated in the garret where the wire rope attachment runs ... The loss to the building was estimated at \$600 which was fully covered by insurance ... The loss to machinery and contents is placed at \$350 which is insured." Buchanan "expressed entire satisfaction with the manner in which the losses have been adjudicated by the insurance company. We understand that his intention is to rebuild as soon as possible." Yet this fire might have aroused an insurance-claim adjuster's suspicion. Firstly, the property was well insured. Secondly, Buchanan was in the process of vacating his *Water-Street Works*, having purchased a derelict Knox-Church building for his new factory.

Indeed, Buchanan did not rebuild his ruined works. Rather, as revealed by tax assessments for his business, Buchanan pocketed the insurance money, \$950. Thus the assessment for the fire-damaged *Water-Street* property dropped from \$1,000 (1896) to \$300 (1897) and then permanently to \$100 (1898). No insurance monies went into the church property — hence its assessment did not change. Postscript: in February, 1896, eleven weeks after the fire, Buchanan sold the business — the church property, the pond, and the ruined *Water-Street Works* — to J.W. Cameron of Strathroy, with Buchanan agreeing to stay on as manager for a year. Cameron apparently failed, and Buchanan re-acquired the property in 1899. In 1903 he sold the derelict *Water-Street Works*, while retaining the pond and church properties.

Two Convictions for Arson: reports in the *Ingersoll Chronicle*.

The first case features an arsonist's confession in 1886. The second case does not give the evidence for conviction for a blaze in April, 1889, other than the disreputable reputation of the accused and his family. Moreover, a second arson-fired blaze in the building, in May, 1889, *followed the imprisonment of the accused for the April fire*. Was more than one arsonist at large, or was the conviction for the first fire a miscarriage of justice?

Case No. 1: 9 September, 1886. "A YOUNG FIRE BUG SENT DOWN."

Our citizens will no doubt experience a sense of relief when they learn that one fire bug has been discovered, tried, and sentenced to five years in prison. At the fire which destroyed the shanty occupied by Mrs. Wright (colored), Chief Wilson's suspicions were aroused that some member of the family had set fire to the building, and he immediately set to work to discover the culprit. He succeeded so well that he suggested to Ben, a lad of [thirteen] years of age, that he knew something about the matter. Of course the boy stoutly denied knowing anything about the matter. Notwithstanding [the boy's

denial], Constable Wilson caused a warrant to be issued for his arrest. The lad in the meantime had gone to Woodstock. The chief, however, by writing him and telling him his mother was going to London, easily induced him to come home, when he was promptly arrested. He still declared his innocence, until, while being examined before the magistrate, Constable Wilson confronted him with a pewter cup in which he had borrowed a quantity of coal oil from a neighbour, stating his mother had sent him for it. The young rascal then asked the chief if he would let him off if he told the truth. The imp then told the following story which we give in his own words: 'My mother had thrashed me and I told her she would never whip me again in that house. I borrowed some coal oil from a neighbour and set the house on fire. I did not know [if] there was anybody in the house at the time.' Mr. Chadwick sentenced him to five years in the reformatory. The boy afterwards confessed to Mr. Wilson that he had torched two other houses, one belonging to a man named Chambers; his reason for doing so [was] that Mr. Sudworth, who had charge of the property, threatened to lick him and hand him over to the constable for stealing cherries. He thought he would leave him with no house to watch, so he had set fire to it. The other [house], occupied by a man named Johnston, he set on fire because one night a man named Roberts came to their place drunk and would not go away till his mother threatened to strike him with an axe. Everybody living around there said the house where Roberts lived would be better burned down, so he had set fire to it and burned it down.

Case No. 2: April-May, 1889. "HARMONY HALL AGAIN ON FIRE."

*Harmony Hall* was the former *Anglo-Saxon Hotel*, which James Fowler (1807-82), a carpenter from North Oxford Township, built in 1851 on the corner of Carroll and Charles Streets. The site was close to a lot that Daniel Carroll had offered free to the *Great Western Railway* (GWR) for its depot in the village. By 1853, however, the GWR had built its rail line and depot along Victoria Street, on the north side of the Thames River. Thus, recalled James Sinclair, "Fowler's investment [on the south side] proved a failure. The building he had erected afterwards fell into disrepute. It was ironically called *Harmony Hall*, and falling prey to fire, disappeared to be remembered by only our older citizens."

11 April, 1889.

This rickety old building, which has already stood too long as a menace to the property in its vicinity, had another scorching early Thursday morning, undoubtedly the work of an incendiary, which makes the fifth attempt to burn the place down. The flames, however, were extinguished before much damage was done. Wm. Smith, otherwise known as 'Jack the Ripper,' was arrested on suspicion of being the guilty party and lodged in the lockup. The accused, who is a perfect monstrosity, is one of a family of two brothers and an older woman, who were shipped here from Tillsonburg some time ago and have been an unmitigated nuisance in the town ever since. They are a dirty low lot of *vags* [vagrants], in the habit of insulting women on the streets, and are a regular pest to the community ... the case was brought before [Police

Magistrate] Chadwick this morning, when the evidence was so conclusive that Smith was sentenced to five years in the penitentiary. Constable Cable deserves credit for his promptness in dealing with this matter, as it was mainly through his diligence that the man was brought so promptly to justice.

18 April, 1889.

"THE FIRE BUG. Wm. Smith, who was sentenced by P.M. Chadwick to five years in the penitentiary for setting fire to Harmony Hall, will likely be retained at the county gaol to stand his trial at the assizes as the officials there are of the opinion that the magistrate exceeded his power in dealing summarily with the case." Apparently some official decided otherwise. Thus "we learn from the Woodstock papers that Deputy-Sherriff Perry took the prisoner to the penitentiary [in Kingston] last evening."

9 May 1889.

"GONE AT LAST. Harmony Hall is a thing of the past. The place that knew it once will know it no more forever. After six attempts to burn the unsightly pile of ruins *the incendiary* has at last succeeded in *his design*, and at four o'clock this morning what was left of the ungainly structure went quietly up in smoke. The place has long stood as an eyesore to the town and a menace to the property surrounding it, and there is a universal sign of relief at its destruction. Not much of an effort was made to save it, the energies of the firemen being directed to the buildings adjoining."

"The incendiary" for May fire and five previous attempts could not have been Wm. Smith. He was lodged in the Kingston Penitentiary. Apparently *vigilante justice* sorted out the disreputable Smith and the decrepit *Harmony Hall* — something best not reported in the *Chronicle*.

## **PART II: FIRE FIGHTING IN THE ERA OF THE HAND-PUMP ENGINE, 1852-73**

The Fires of 1856 and the Town's Establishment of a Fire Brigade.

In March, 1855 a public meeting of inhabitants asked council to organize a fire company. Councillor Charles Parkhurst was doubtful — he judged that the supply of water was insufficient in parts of town, and that water tanks would be necessary. The Reeve, Dr. J.F. McCarthy, was opposed to any action; "those most desirous of establishing a fire company for the protection of their property," he argued, "should do so by private subscription." When Adam Oliver and John Galliford moved to appoint a committee to enquire about the cost of a fire engine, their motion failed, by a vote of 3 to 2.

Consequently when major fires visited Ingersoll in 1856, the village could only respond with local citizens manning a bucket brigade. Excerpts from the *Ingersoll Chronicle* document outcomes from two such fires.

8 February, 1856.

DESTRUCTION OF THE TOWN HALL AND MARKET BY FIRE. The town hall and market of this place were totally destroyed by fire on Friday morning last about one o'clock ... The belfry attached together with the new town bell, which had been but recently erected, were also destroyed. The fire is supposed to be the work of an incendiary, as the clerk, Captain Berry, informs us that there had been no fire in the building after five o'clock the previous night. This fact, taken in connexion with the [origin of] the fire in a part of the building where no fire is ever required, leaves no other alternative than to believe that the premises were fired by someone. The official records and papers of the municipalities of Ingersoll and West Oxford were all destroyed, together with many valuable documents belonging to the Clerk."

Insurance to the amount of £200 covered a small part of the loss.

29 February, 1856.

ANOTHER DESTRUCTIVE FIRE. Another fire, much more disastrous in its results than that which occurred on the 1<sup>st</sup> inst. has visited our village. At 12:30 this morning (Saturday) the alarm of fire was raised and on arriving on the spot we discovered the Dry Goods store of Messrs. *Taylor, Bain, & Co.*, Thames Street, in flames. The buildings adjoining on the North side — one occupied by Mr. John Ross as a Cabinet Warehouse, owned by Mr. Kneeshaw of Hamilton, and another occupied by Mr. Smith as a Cigar Factory, and Mr. Miller Taylor, owned by Mr. John Bennett of East Nissouri — soon ignited, and in a short time the three buildings lay in ruins. Through the exertions of our citizens the large brick store of Mr. Eastwood, on the south side, was saved, as well as the dry goods store of Messrs. Barber, on the north side of those destroyed. The loss by this fire has been estimated at £3,000 to £4,000."  
[Insurance coverage: £1,350]

#### The Village Establishes a Fire Service, 1856-74.

In November, 1856 a village by-law allocated £300 to purchase a hand-pump fire engine and establish and equip a fire brigade. The village was unlucky with its purchase of a fire engine, which turned out to be "incapable of throwing water on the roof of a three-story building," would not work at 80 feet distance, and was "more fit to irrigate a garden than to secure our village from extensive conflagration from fire already broken out." The council resolved to "return the engine recently purchased from Messrs. Cowing & Co., Seneca Falls, N.Y., the machine in question not answering [our] expectations." Two weeks later it purchased a more satisfactory engine from George Perry of Montreal "at a cost not exceeding £175 exclusive of ornaments." But the American firm appears to have refused the return. Thus the village came to own two hand-pump machines, more powerful than the other.

To recruit and organize the brigade, the council appointed George F. Hunter as Chief Engineer and Thomas Drope as Captain. Hunter, aged 29, was a commission merchant, grocer, and insurance agent; and Drope, aged 28, was a grocer and grain merchant. "The establishment of a Fire Department," the organizers reported in February, 1857, "we find is a very popular movement, almost every young man in the



village being desirous of joining. We have, however, with due regard to the importance of this office, selected a sufficient number of able-bodied young men, principally mechanics and residents of the village, to work the engine." In February, 1857 the Council appointed William Ellsworth, proprietor of the *Anglo-American Hotel*, as captain of a Hook & Ladder Company, which he was to organize.

The village's first fire-service by-law, passed in August, 1857, provided for a Brigade of 120 men in three companies: the *Protection Company*, 40 men; the *Styx Company*, 60 men; and the *Hook & Ladder Company*, 20 men. The first two companies were each to work a six-man hand-pump engine, drawing water from a creek or pond and directing it through fire hose to a given fire. The *Hook & Ladder Company* was to have specialty tools for climbing into the upper stories of buildings or on roofs; pulling away wall or roof materials to allow water streams to hit the interior of the building; pulling down structures adjacent to the burning building to keep the fire from spreading; and rescuing people or contents from upper stories. The fireman's ladder, for example, allowed fire fighters to scale the upper stories of buildings by reaching out a window and crashing the ladder's hook through the window of the floor above. The hooks of other ladders were designed for the scaling of roofs. William Ellsworth failed to form a Hook & Ladder company, however, for the reason that he "left the country" in 1858.

A *Chief Engineer* and an *Assistant Engineer*, appointed annually by the Village Council, commanded the Fire Brigade. The Reeve and members of Council were to be *Fire Wardens*, who organized themselves into a Board of Fire Wardens, chaired by the Chief Engineer. The Board provided general oversight of the Brigade, while the Chief Engineer managed the discipline and conduct of the firemen, care for the buildings and kit, and keeping exact rolls of the firemen: their date of admission, age, residence, and profession, and the date of their dismissal or discharge. Each Company was headed by a Captain and two Lieutenants, nominated by the Chief Engineer for approval by the Council. Brigade members were unpaid, but were exempted from a \$2 poll tax (in lieu of two days of statute labour).

The Chief Engineer, or in his absence the Assistant Engineer, was to have "the sole and absolute control over all the engines and other apparatus of the Fire

Department, and over all the officers and members of the Fire Brigade, and other persons working therewith, or at any fire." The Chief Engineer was authorized and empowered "to cause to be demolished, or taken down, all buildings, erections or fences which he shall deem necessary ... to arrest the progress of any fire." In order that the engineers, officers, and firemen could be readily distinguishable at a fire, "they were to wear such dress and other insignia such as the Board ordered. "Under the by-law, "all persons at or near any fire" were to assist in extinguishing the fire "when requested to do so by the Reeve, Councilmen, or Engineers of the Fire Brigade, or Captains of companies ... and any person refusing to comply with such order ... shall be liable to immediate arrest and imprisonment ... and upon conviction before the Reeve or any other Justice of the Peace shall forfeit and pay a sum of money not exceeding five pounds nor less than five shillings."

In March, 1859 a "DESTRUCTIVE FIRE" brought the brigade into action:

A disastrous conflagration occurred in this place between one and two o'clock yesterday morning, causing the total destruction of four buildings (wooden) in the most business part of the village. The fire broke out in a wooden tenement on Thames Street, nearly opposite the Royal Exchange Hotel, belonging to Mr. G.G. Stimson and lately occupied by Mr. Samuel Hillman as a boot and shoe store. The premises had been unoccupied for the last three weeks, and strong suspicions are entertained that the fire was the work of an incendiary. The fire, we learn, was first discovered by a person driving by. The conflagration had attained considerable head-way before it was discovered, and required the greatest efforts of the firemen to prevent greater loss.

Although the fire was on the main street in the town core, its distance from the water source — Hall's Creek — was too great for either engine, on its own, to bring creek water to the fire. Thus the Brigade had placed its top engine at the creek, from which it pumped water to the second engine. A "slight mistake," the *Chronicle* opined, "was in having placed the best engine at the creek" rather than the weaker one ... "the relative position of each [engine] ought to have been reversed." A second deficiency was the Brigade's lack of a Hook & Ladder Company, which could have pulled down the building immediately adjoining that in which the fire broke out, thereby preventing the fire from spreading. A third issue concerned the citizenry. "We were surprised and pained," noted the *Chronicle*, "to learn the reluctance of some parties to aid the firemen and others of the citizens in their noble effort to save property." At least one such person, William Loeb, was fined for refusing to help at the fire.

A fourth issue concerned whether or not the village councillors, in their capacity as Fire Wardens, could exercise some authority at a fire site: "*A petition from Captains Gallagher and Waite and other officers of the Fire Companies praying that no interference with the fire companies in future, at fires, by the fire wardens be permitted, and that the Fire Companies will disband if such a course is persisted in ... By permission of the Reeve, Capt. Gallagher of Protection Fire Company stepped forward and stated that unless some action was immediately taken on the petition, he was instructed to say that the Firemen would disband after tonight.*" The Council did nothing, the Brigade voted to disband, and the Council passed a by-law (1859, No. 40) to form a new brigade, to include members of the old Brigade who wished to remain.

Nevertheless, two by-laws mitigated the councillors' authority at fires. Firstly, the 1859 by-law delegated certain responsibilities to a new fourth company — a *Property Saving Company* of 10 men appointed by Council — to "take charge of all property exposed in the streets, or otherwise exposed, at fires, and see that such property is put in safe keeping, and to do all in their power to prevent said property from being stolen or damaged." Secondly, an 1863 by-law replaced the Brigade's "executive committee, the *Board of Fire Wardens* — the Chief Engineer and the councillors — with a *Board of Representatives*, comprised of firemen: the Chief Engineer and the Assistant Engineer, and by election in each company, the Captain, 1<sup>st</sup> Lieutenant, and one other member.

Meanwhile, the Brigade lacked a proper Engine House — a heated hall in which to hold meetings and store the fire engines, hose reels, and hose. In December, 1860, reported the Chief Engineer, "the fire engines were totally unfit for use, as they were completely frozen up. They had no place to put them, as they had been ordered to take them from the place where they presently are; and asked the Council to provide a proper place for them." After spells in temporary quarters (a building rented from Mr. Leeper, then part of the market building), the Council erected a brick fire hall on land donated by the Great Western Railway, adjacent to the railway station. In February, 1864 the council presented the Chief Engineer with the key to the new

engine house.

The 1863, 1867, and 1874 Brigade By-laws recorded various routine features of the fire service during the hand-pump fire engine era. The kits of the Chief Engineer and Assistant Engineer were to include a trumpet. The fireman's uniform was to comprise hat, coat, belt, and other clothing furnished by his company. The Council was to pay premiums to the company showing up first at the most fires in a given year, the company showing up first at a given fire (\$2), and the company being the first to throw water at a given fire (\$2). Two new developments, discussed below, were Council's *Fire Limits By-law* of 1867 and the long-overdue formation of a Hook & Ladder Company in 1868.

A Fire-Limits By-law, 1867. Ingersoll's wooden core was an increasingly severe fire risk. In 1859, as noted above, a "disastrous conflagration" destroyed four wooden buildings in the business part of the village. In January, 1867, a destructive fire totally destroyed "all the wooden buildings on the east side of Thames Street between Mr. Poole's brick store and Mr. Ferguson's ... and, notwithstanding the efforts of the firemen – who were early on the ground – the whole was in a short time a mass of ruins." In March, 1867 the Council responded with a *fire limits by-law* that prohibited the erection of wooden buildings in a defined core zone (bounded by Hall's Creek in the east, King Street in the South, St. Andrews Street in the north and Oxford Street in the west). Wooden structures already in the zone were allowed, but any additions to these buildings were to be constructed with brick or stone.

A Hook & Ladder Company, 1868. The Fire Brigade had no *Hook & Ladder Company*, even though Brigade by-laws since 1857 had provided for one. Finally in December, 1868, the Council authorized the Chief Engineer, James Brady, to form a *Hook & Ladder Company* with up to 30 men. Two Councillors thought 20 men sufficed. Thomas Brown, a wealthy tanner, favoured a smaller force because "every man at a fire is a fireman. There is always plenty of help." Indeed, Ingersoll's Fire-Brigade by-law empowered the Chief Engineer to "command assistance of any male inhabitant between the ages of sixteen and sixty years" in the conveying "of any engine or other apparatus to or near a fire." "However, Brady argued successfully for keeping the "Hooks" above minimum strength: firstly, the brigade "could not always rely on having all the men at a fire. Some were sick and some were [away] from home"; and secondly, lesser numbers would require, counter-productively, that the firemen "work without rest." The Chief Engineer's judgment was vindicated at "the Gallagher fire on Thames Street" in October, 1869 — men of the "the Hook & Ladder Company were first on the ground, and by the use of buckets were the means of saving the building." Their feat won the company the \$2 premium for being first at the fire.

The Chief Engineers, 1858-75. The brigade commander was an unpaid, part-time officer. George F. Hunter (1857-58) was a commission merchant, grocer, and insurance agent. David M. Robertson (1859-60) was a commission merchant and lumber dealer. John Munro (1861) was a foreman at Adam Oliver's mill. Reuben H. Carroll (1862-67) was a miller on Carroll's Pond who served on Ingersoll's first five town councils (1865-69). James Brady (1868-75) was a hotel proprietor, an auctioneer, a Life Insurance and Real Estate agent, and a Deputy Reeve on the town

councils of 1874 and 1875. Before becoming Chief Engineer, he had been 2<sup>nd</sup> branchman on the original Brigade of 1857 and had been the Brigade's Assistant Engineer during the years 1862-63.

### **PART III: THE FIRE SERVICE IN THE ERA OF THE STEAMER, 1874-89**

Several mid-19th century North American cities and towns suffered "great fires" in their commercial core areas, which then were constructed of wood. In British North America "great fires" erupted in Hamilton, 1832; Kingston, 1840; London, 1845; Toronto, 1849; Windsor, 1849; Fredericton, New Brunswick, 1850; Montreal, Canada East, 1852; Peterborough, 1861; Stratford, 1875; St. John, New Brunswick, 1877; and Ingersoll 1872 and 1874. American "great fires" broke out in Detroit, 1805; New York City, 1835; Buffalo, 1829, 1832, 1880; and Chicago, 1871 — recall the legend of Mrs. O'Leary's cow — and 1874. A broad reaction to these ruinous conflagrations was to rebuild urban cores with brick and stone, via *fire-limit by-laws* to ban the erection of wooden buildings in burned-out core areas. Other responses included the purchase of cutting-edge fire-fighting appliances, the reorganization and professionalization of fire brigades, and efforts to combat arson.

During the early 1870s, two huge conflagrations gutted the town's wooden core and brought new urgency to fire-fighting initiatives. An 1872 blaze devastated the north end of the commercial core (Charles and Thames streets near the river). The estimated damage was \$257,034, of which \$125,501 was insured. In 1874 a second inferno devoured the south end of the core (King and Thames streets). The estimated damage was \$40,000, the portion insured not reported. Ricketty, densely-packed wooden buildings fueled the two catastrophes. The 1872 fire alone was a lesson learned. As the *Chronicle* opined, "Our town for a number of years past has been comparatively free from any very hazardous fires until the 7<sup>th</sup> of last month, when our eyes were opened to the fact that our whole wealth and property might, at a moment's notice, be burnt up and destroyed within a few hours, without our being able to resist the devouring element."

Excerpts from the *Chronicle* (below) describe the carnage in the 1872 and 1874 fires. The town's response was to include two new fire-limits by-laws (1872-73), consideration of a waterworks drawing water from James Smith's millponds (1873), and the purchase of a steamer fire engine drawing water from the town's millponds and creeks (1873).

#### Ingersoll's "Great Fire of 7 May, 1872."

The fire broke out a few minutes before eight o'clock on the evening of Tuesday, the 7<sup>th</sup> inst. [instant], in part of the stables attached to the *Royal Exchange Hotel*, on Oxford Street near the corner of Charles Street. The hotel was situated on the corner of Thames and Charles streets ... The barn and the hotel were old frame buildings, and were thickly surrounded by old frame tenements. From these buildings the fire spread rapidly in a south and easterly direction, taking with it as it went south the late residence of Mr. Charles P. Hall and the *Prince of Wales Hotel* ... The market square prevented

a further spread of the fire in this direction. The buildings on the west side of Oxford Street and north of Charles street, including the Daly House stables, Mr. Chambers' hotel, the old Wesleyan church building, Mr. R. McDonald's barn, containing a large quantity of coal oil, Messrs. *Badden & Delaney's* carriage and wagon factory, the McMurray Hotel, and several other smaller buildings, sustained a severe scorching and narrowly escaped taking fire, but were saved by the strenuous and untiring exertion of the inhabitants whose only appliances were buckets of water and wet blankets and carpets. While this mass of frame buildings was burning ... the heat was intense and flames rolled along as the waves of the sea, one over the other, each succeeding roll licking in and consuming another of the many small buildings at the rear of the splendid three-story brick block on the west side of Thames street, which seemed to catch and burn simultaneously the whole length, leaving it a heterogeneous mass of ruins. Many of the buildings in this block were new, or nearly so ... The goods on this side of the street were removed to the stores opposite, in the hope that they would be safe, but so fierce was the fury of the flames that before the west side of Thames street was half-burned the east side caught fire, and the main street of the town was one channel of fire. When the east side of the street caught it was utterly impassable, and the only means of saving the goods in the stores and furniture of the houses was to take them out the back doors down to the bank of the creek which runs at the rear. This was a very difficult and tedious process, and as a consequence very little goods were saved.

Another Great Fire in Ingersoll, 17 July, 1874.

GREAT DESTRUCTION OF PROPERTY. LOSS \$40,000 ... On Saturday evening, at half-past eleven, fire was discovered in the premises of the *Nationalist* printing office — a three-story frame building, adjoining Mr. C.P. Hall's brick block on the south side of King Street, near the corner of Thames and King Streets. The proprietors of the *Nationalist*, Messrs. Constable & Harris, together with the workmen, resided in this building, all of whom narrowly escaped with their lives. The flames soon spread to Mr. Hall's brick block, on the corner, and to Dr. Hoyt's office on King Street. The efforts of the firemen at this time were most effective. The large steam furniture establishment of Messrs. McIntyre & Crotty, and buildings adjoining on King Street, immediately opposite where the fire broke out, was threatened many times with destruction — in fact they were several times on fire — but by the activity and foresight of the brigade, were saved. Had this property not been saved, it is probable that the fire would have proved fully as disastrous as the fire of May, 1872. A strong westerly wind prevailing, the flames soon spread to the buildings — all frame — to the east on the south side of King Street ... The flames rapidly spread on Thames Street South destroying the entire splendid brick block of Mr. C.P. Hall, our handsome post office owned by Mr. Thirkell, the postmaster, and the two story frame building owned and occupied by Mr. Henry O'Connor ... The origin of the fire is unknown, but circumstances lead to the supposition that it was the work of an incendiary ...

A great proportion of the buildings destroyed were frame rookeries that have been considered ancient for many years, and several of the brick buildings were what were commonly known as *bricknogs* — [bricks used to infill vacancies in a wooden frame] — and consequently were of little real value.

#### The Town Responds: Municipal Fire-Limits By-laws of 1872-73.

On 17 May, 1872, just 10 days after the “great fire,” the council passed its second fire-limits by-law, and a third fire limits by-law followed in January, 1873. Like the first such by-law in 1867, these by-laws banned the erection of “wooded buildings and verandahs” within “certain limits of the Town of Ingersoll.” Wooden structures within the limits could stay, but any additions to, or enlargements of, had to be constructed of brick or stone.

The *fire limits* encircled the town’s densely populated core. The function of the 1872 and 1873 by-laws was to expand the zone demarcated by the fire limits of 1867. The 1873 by-law, for example, retained the enlarged fire limits of 1872 but added a small parcel: lots fronting both sides of lower Thames Street, between Hamilton Street and the Thames River. The 1873 Act also established stiff fines (up to \$20) for persons who refused the town’s orders to remove unlawful buildings

As marked by dashed lines on the Fire Insurance map below (3.1), the *fire lines* of 1873 proceeded north from the Canterbury Street bridge along the west side of Partlo’s Pond to Mill Street, continuing north on the west side of Mill Street to its intersection with Hamilton Street; west on Hamilton Street to Thames Street, there including both sides of Thames Street to the Thames River, then continuing west on Hamilton Street to Duke, south along Duke Street to Frances, east on Frances Street, south on Oxford Street to Ann, and east on Ann Street to Canterbury Street and the bridge.

The fire limit by-laws had immediate application to the northern part of the town’s commercial core (around the intersection of Charles and Thames Streets), which the great fire had cleared of flimsy wood tenements and rookeries, and where the town was rebuilding. In July, 1872, noted the *Chronicle*, “twenty-eight stores are in the course of erection in Ingersoll. It is thought that the greater part of the burnt district will be rebuilt by October next. Great difficulty is experienced in getting brick.” In September, 1872, “the mayor called the attention of the council to the erection of a wooden building in the rear of the new Niagara District Bank ... On motion of Mr. Brown seconded by Mr. Buchanan the mayor was instructed to see that the provisions of the by-law relating to the erection of wooden buildings within the prescribed fire limits were adhered to.”

A Road Not Taken: a Waterworks for Fire Fighting, 1873-74.

In March, 1873, the Council's *Committee on Fire, Water, and Gas* recommended the purchase of "the Holly system of waterworks" for fire fighting. Brantford had purchased a waterworks in 1870, followed in Oxford County by Tillsonburg in 1874, and Woodstock in 1880.

As envisioned for Ingersoll, the waterworks would comprise a brick pump house adjacent to the proposed water source — Smith's ponds (his *Lower Pond* and *Upper*



*Pond*); iron pipes [water mains] to convey the pond water under the principal streets, with enough pressure to reach the top of any building; and hydrants with hose connections located on water mains at convenient intervals would provide the outlets for the fire service.

In the event of a fire, firemen would rush a hose reel to the nearest hydrant; connect the hose to the hydrant with a coupling; unwind the coiled hose towards the fire; and then, with a nozzle, release the water under pressure to play on the fire. With a waterworks in place, hose reels would have been the key fire-fighting apparatus. Fire engines to pump water would have an auxiliary role, for fires lacking proximity to a hydrant.

James Smith was to lease to the town ground suitable for the pump house for 20 years and “guarantee sufficient head of water to run the works for \$100 per year and \$6 an hour while being used.” The Council called a public meeting on the proposal and hired the Town’s Public Land Surveyor, Col. W.G. Wonham, “to estimate the quantity of water in Mr. Smith’s ponds when full; also the size of the [head] race required to drive eighty horse power” (the waterworks pump).

Wonham’s report was negative on the capacity of Smith’s Pond for motive power: “Under certain circumstances and for a short time sufficient water could be obtained, but a sufficient head could not be relied upon at all seasons or for any length of time.” At the public meeting, James Noxon, Ingersoll’s leading industrialist, endorsed Smith’s Ponds for water supply, but not for motive power — steam was required to run the waterworks pump. As Noxon reasoned, the miller (Smith) had first claim on the head-races for his two mills when the water was low; thus, after his mills were supplied “there will not be sufficient water to run the works for two hours. The drought of summer and the ice of winter affect the supply ... During a residence in Ingersoll for sixteen or eighteen years, the dams have been repeatedly swept away by spring freshets. That fact in itself must condemn water power to every man who desires protection against fire ... It might be said that steam engines are liable to break down, get out of order, etc. If so, they could be repaired within two or three hours, whereas it would take as many weeks to repair a dam.” The Public Meeting carried Noxon’s non-binding resolution which “expressed our disapproval of using [Smith’s] ponds to supply water power to operate a system of water works but would express our entire confidence in steam power.” Council’s response was By-Law No. 62 to raise \$25,000 for the purchase of a waterworks, presumably with steam power understood. The ratepayers narrowly passed the by-law in March, 1873 (109 to 102). The vote in Ward 1, north of the river, was strongly negative. In the event, the Council never acted on the by-law — it was a dead letter.

#### Upgrading the Kit: the *Steamer* and the *Chemical*, 1873-90.

Instead, in November, 1873, the Council purchased a *Silsby Rotary Steam Fire Engine* for \$4,750. Of American manufacture, the Town’s *steamer* — a portable steam engine — was a mobile carriage with two vertical fast-firing boilers, a water tank, and

a pump to draw water from a pond or stream into the tank. Steam generated by the boilers forced tank water under pressure through hoses into the fire. The steamer was more powerful than the hand-pump engines. This engine, claimed its manufacturer, could throw 500 gallons of water per minute, in a horizontal stream from 250-260 feet, or in perpendicular stream of over 200 feet. Its superior capacity warranted a reduction in fire-insurance costs.

In 1873 the brigade acquired a new engine house for the steamer. Judging that the town had "no proper house to put the engine into," Council provided for "an addition to the northeast end of the market building," immediately behind the town hall on the northeast corner of King and Oxford Streets. The north side engine house, next to the Great Western Railway (GWR) station, remained in service to store a hand-pump engine and hose.

The brigade's fire-fighting strategy was to park the steamer at a good source of water and then lay out as much hose as necessary, up to several hundred feet, to reach the site of the fire. Mr. James Brady, Chief Engineer of the Ingersoll Fire Brigade, was confident that they could take water anywhere; the brigade had about 1,000 feet of hose, and it was their intention to sink water tanks in different locations about the town, so that in case of a fire the engineer would know where to place the steamer. The steamer's disadvantages were its weight (3.5 to 4 tons) and hence slow movement to the site of the fire, and a tendency of its valves and pumps to freeze up in winter.

Beginning in 1875, council built wood water tanks at water-scarce locations. By 1888 the town had eight tanks, each of them designed to hold water to a depth of 12 feet. Effectively, "tanking the town" supported the steamer's access to reliable sources of water where blazes might erupt, something that local water courses did not always provide. In February, 1878, for example, fire had destroyed the *Atlantic House Hotel* on Hamilton Street, along the south side of the river. The steamer had arrived in good time at a nearby waterhole, Hall's Creek at the St. Andrew's Street Bridge, but could not draw enough water to feed the boiler and drive the hoses. Then in May, 1878, fire destroyed the *Christopher Bros. Planing Mill*, again because the steamer, parked at the St. Andrew's Street Bridge, could not draw enough water to function. In 1886 M.T. Buchanan's new dam and pond augmented the water supply at the St. Andrew's Street Bridge.

In 1886 the town acquired a *Chemical Fire Engine* on a ten-year lease and gave the Fire Brigade a new Chemical Company to run it. "The chemical," spraying a fire-retardant combination of acid and soda, was effective against incipient blazes. If the fire was in an advanced stage, then the chemical engine was effective in preventing the fire from spreading to nearby buildings. When fire struck the livery stables at the rear of the *Royal Hotel*, for example, "the chemical did good work in putting out the blaze in the long frame shed running out behind Casey's barbershop and taking charge of it altogether, thus enabling the steamer crew to play on the [main] fire

itself.”

In 1887 Council purchased a team of horses to haul the steamer to and from fires, and in 1889 it purchased a third horse to haul the chemical engine. In the first instance, the object was to get the steamer more quickly to its water source than a squad of 18 firemen could manage, often on muddy or slushy pothole-filled streets. The substitution of horses for firemen incurred expenses. By council-committee estimates, the team itself would cost \$350 to \$400; the purchase harness and other equipment would cost \$100; the north half of the engine house was to be fitted up in the proper manner for the purpose of keeping the horses; and the Town needed to engage a man to take charge of the team and remain day and night on the premises. Similarly, the purchase of a third horse for the chemical engine required alterations in the market-building engine house to accommodate horse and harness.

#### Reorganization of the Fire Service, 1873-90.

After purchasing the steamer in November, 1873, the town council organized a *Steam Fire Engine Company* of 62 men, who elected 15 officers. The steamer required two salaried specialist officers: engineers — to be “on call at all times” — to operate the steamer and keep it in good repair. The 1<sup>st</sup> Engineer, John Warnock, a machinist by trade, was paid \$100 per annum, and the 2<sup>nd</sup> Engineer, Fred Shepherd, a tanner, \$50. The steamer company was to practice “at least once a month in mild weather,” and subsequently “every two months in summer.” The large size of the steamer company proved to be temporary. An 1878 by-law “to reorganize and regulate the Fire Brigade” provided for 105 men in *four* companies — *just 25 for the Steamer Company*; 30 men for Protection Company No. 1; 30 for No. 2 Company; and 20 for the Hook & Ladder Company.

With a steamer on hand, the older appliances fell into disuse, and the brigade shrank in size. The two hand-pump engine companies vanished, No. 2 Company by 1881, No. 1 Company in 1883. The Hook & Ladder Company disappeared by 1881; what remained was the Hook & Ladder *wagon* with its specialized devices, to be drawn out as needed by firemen. The brigade strength, 105 in 1878, dropped to 71 in 1881, 36 in 1885, and 22 men in 1889 — 18 men to manage the steamer and four more to manage the chemical engine (acquired in 1886).

In the process, the fire service became professionalized — that is, staffed with full-time salaried personnel. Whereas volunteers disappeared with the vanished hand-pump companies, firemen for the new appliances were salaried. In 1885 the steamer company paid \$24 per annum to 36 men, and higher salaries to the company’s three engineers. In 1888 the Council budgeted for \$50 to Robert Vance, Chief of the Brigade; \$100 to John Warnock, chief steamer engineer, \$30 to each of two assistant steamer engineers, and \$864 to 36 firemen at \$24 per year.

Ingersoll’s adoption of a steamer-based fire service brought other changes. The 1878 Brigade by-law banished citizen helpers at fires. Gone was the provision in earlier by-laws that the Chief Engineer could “command assistance of any male inhabitant between the ages of sixteen and sixty years.” Conversely, the by-law empowered the Chief Engineer to clear the fire zone of persons who might obstruct the work of the

Brigade. Also dropped was *Property Savings Company*, staffed by citizens and the requirement that Chief Engineer and the Assistant Engineer carry trumpets.

#### Mishaps: the Fire Service in Action, 1874-90.

At Ingersoll's second "great fire" of July 1874, the town's newly-purchased steamer arrived at the eleventh hour due to difficulty in locating it — the steamer had not been placed in the fire house. In the November of the same year, David Armour, a prisoner "who had been confined in the lockup the night before on a charge of disorderly conduct, was burned to death" in a market-building fire — there had been a delay in "getting up steam ... caused by the engine and everything belonging to it being cold and damp." The *Chronicle* faulted the man "whose duty it was to keep the room warm when the cold weather sets in having neglected to do so." Perhaps unjustly: the engine house then lacked a proper stove for heat and a proper *tower* for drying the hose.

In 1876 fire destroyed a steam cabinet factory on Oxford Street; the steam fire engine and hand-pump engines were promptly on the grounds, but owing to the distance of the water supply and some defects in the hose, it was some time before they got into operation. In 1878, as noted above, fire destroyed the *Atlantic House Hotel* and the *Christopher Bros. Planing Mill*. In both cases, the steamer had arrived in good time at the Fire Brigade's preferred waterhole, the St. Andrew's Street Bridge, but could not draw enough water to function. In March, 1880 fire destroyed a livery next to the C.V.R. station, after "a delay of half an hour before water was thrown by the engine ... The 'steamer' [had been] on hand promptly and in a few moments had steam up ready for work, but by a mistake on the part of the town constable, the doors of the engine room [had been] closed before the hose [had been] taken out, which caused a delay of 20 minutes, [and] which was further increased by the hose bursting so that it was a full half hour from the time the alarm was first sounded till water was thrown, the building by that time burned to the

ground." In November, 1880 a "A BIG BLAZE" erupted in James McIntyre's Furniture Factory. "The alarm was quickly sounded, the "steamer" was promptly on hand, and steam up in seven minutes, but even at that ... was not enough to save the building where the fire started, the whole being in flames, owing to its combustible nature, before any water was thrown."

In 1886 the Hook & Ladder *wagon* — no longer with a *Hook & Ladder Company* to draw it out to the fire — was a wasted resource. Its appliances were in good repair but "have not been used to any extent ... owing to the difficulty of getting them to the fire; as it takes all the men to haul the [steamer] and hose [reels], the only way they can be got is to send a portion of the men back for them." In 1888 an inspection revealed that three of the town's eight wood water tanks were half empty. In another incident, "the firemen ran the reels to the fire last Friday evening rather recklessly. In going down Thames Street on the sidewalk — contravening the Brigade by-law — they ran into and knocked down a child, nearly knocked a man through a window, and ran a wheel over the foot of another crushing his toes badly." In a third incident, "the firemen were quick enough, but the engineer reported [in error] that there was no water in the tank *when there really was over six feet*. He explains this by saying that when he let the hose down it struck against a cross bar and he supposed it was the bottom of the tank"; the house burned to the ground. In 1889 the tanks north of the river were nearly empty and the residents without protection from fire.

A Waterworks Replaces Ponds and Creeks as the Water Source for the Fire Service, 1890.

In 1890 Ingersoll purchased a waterworks for fire protection and potable water. Pond water was not potable. Thus the *Waterworks Company* drew water from springs 2½ miles outside the town. The waterworks included a pump house at the water source (the township springs), which delivered water to a 120-foot high standpipe within the town limits; from the standpipe gravity fed water under pressure into water mains with hydrant outlets. Fire fighting entailed rushing a hose wheel to the hydrant near the fire; hooking the fire hose to the hydrant with a coupling; unreeling the fire hose towards the fire; and playing water on the fire through a narrow-gauge hose nozzle. Hose reels and fire hose were the key apparatus. The chemical fire engine remained in service, but two fire engines — the hand-pump engine and the steamer — were up for sale. When neither sold, they went into storage. The town's ponds and creeks remained important for the ice harvest and delivering water power to mills, but for fire protection, no longer.

#### **PART IV: MILLPONDS, CREEKS, AND SEWAGE DISPOSAL IN INGERSOLL**

The purchase of a waterworks in 1890 made sewerage a municipal issue. As a *Chronicle* editorial reasoned, "the majority of the businessmen in town will without doubt introduce waterworks in their stores and shops, while a large number of private residents will also fall into line. In view of these facts the questions will arise, what is to become of all the surplus water? How will the content of cesspools, water closets, etc. be disposed of?" The only intelligent answer, argued the editor, was a sewerage system. A company bidding for a sewerage contract agreed: "Common decency demands that the sewage be collected, conveyed to some point distant from habitation, and there purified to such degree that it may be discharged into the river. The effluent from the purification works should be non-putrescible and all solids should be removed therefrom."

Such advice ran counter to conventional wisdom. "The Thames River courses through the heart of the place," enthused an Ingersoll writer in 1877, "and in its nature has given us a magnificent sewer. The drainage from all parts of the town toward the river is unobstructed, and the result is no stagnant pools, breathing miasma, nor are the streets rendered impassable from mud." "Perhaps the cheapest and best plan to dispose of the sewage," opined a *Chronicle* editorial in 1890, "would be to run it into the river, as is done by London, Woodstock, and other places." Similarly, James Sinclair, the veteran chair of Ingersoll's Board of Health, proposed a network of trunk and branch sewers to collect *untreated waste water* and dump it into the Thames River, slightly downstream from the town. His proposed system made maximum use

of Ingersoll's millstreams to minimize the "the expense and inconvenience of disturbing [i.e., digging up] ... business thoroughfares." To install a trunk sewer for Ward 2, for example, he would "lay a pipe of sufficient calibre for this section by commencing at the foot of Partlo's dam, *placing this pipe in the creek bed, and continuing it in this position until it reaches the river.*"

Nevertheless, in 1912 a Toronto engineering firm designed a system to treat town sewage before discharging it into the Thames River. The proposed system would comprise main sewers on each side of the river; lateral sewers along each important street; a disposal works (i.e., a sewage treatment plant) on the north side of the river in the west end (the end with the lower elevation); and a pumping station. The sewage treatment plant would consist of sedimentation tanks, percolating filters, subsidence basins, and sludge drying beds. The pumping station was necessary to move sewage from the east end of town to the sewage treatment plant in the west end, the natural fall of the land being insufficient for gravity to do the work. Treated sewage from the disposal works was to be deposited "at a point near the Wonham Street Bridge, at a level below the Thames River." The cost of the proposed system was \$57,000, of which \$11,000 was for the pumping station.

In a plebiscite the ratepayers rejected Council's by-law to purchase the proposed system. The townsmen, opined the mayor, felt themselves to be already highly taxed and balked at an increase of taxation to finance \$57,000 of debentures. M.T. Buchanan questioned the need for the \$11,000 pumping station "when there were only such systems in two or three places in Canada." During the mid-1930s, Ingersoll's Board of Health and Chamber of Commerce urged the Town Council to consider a system of sewerage.

The town was ready to act by 1939, but the Second World War intervened. The wartime town councils (1939-45) deemed the sewerage system and two other priorities — a new high school and new hospital — as post-war projects. In August, 1947 the Town began construction on a treated-sewage system. Like the proposed system of 1912, it comprised a treatment plant and pumping station, trunk sewers on both sides of the river, and branch lines. The system's estimated cost was \$784,000 and was expected to take two years to complete.

### **POSTSCRIPT: INGERSOLL'S FIRE SERVICE WITH THE WATERWORKS.**

In 1890 Ingersoll purchased a waterworks for fire protection and potable water. Water for the fire service came, not from the town's ponds and streams, but rather from springs 2½ miles outside the town. Fire fighting entailed rushing hose reels to the hydrant nearest the fire; connecting the hose to the hydrant; laying out hose from the hydrant to the fire zone; and throwing water on the fire through the hose with an adjustable narrow-gauge nozzle. Independently of the waterworks, the brigade had a horse-drawn chemical fire engine to counter incipient fire.



The brigade made do with its pre-waterworks equipment. It rushed its horse-drawn chemical engine to the fire, towing a hose reel, the hose to be connected to the nearest hydrant. Firemen manually rushed additional reels with the balance of the hose needed to reach the fire. But the waterworks-based fire service had shortcomings, as noted below.

Friction lowered water pressure from standpipe to fire site. Gravity fed water from the 120-foot standpipe into mains through to hydrants, and then through several hundred feet of hose to reach a fire. As water passed on this journey, friction reduced the pressure. Ideally water left the standpipe at 65 pounds pressure but dropped to 40-45 pounds pressure at hydrants near the fire hall; 45 pounds pressure at the hydrant was regarded as normal for fighting fires. Normal was not always attained. At one fire in 1927 the pressure was 35 pounds at a hydrant on Thames Street North; then, after water travelled through 1,300 feet of hose to the fire, the pressure was 5 pounds at the hose nozzle — thus, 30 pounds lost between the hydrant and the nozzle. And the house was reduced to ashes.

A shortage of hydrants in outlying areas of the town — that is, outside the core area defined by the fire limits. This meant that the brigade would need great lengths of hose to connect a hydrant to the fire zone, with friction reducing the water pressure at the nozzle end. In 1900 the Council contended that the town was entitled to 1½ miles more pipe and 12 more hydrants than the Waterworks Company had provided. The company countered that the 1½ miles of pipe from the pumping house (the springs outside the town) should be counted, hence it had provided the 6½ miles of mains required. The two sides signed a new agreement whereby the company was to lay down 4,000 feet of mains *in residential areas* and provided nine extra hydrants, of which the town paid for three.

An outdated kit: the chemical engine and small hose wagon in tow. In April, 1886 the town acquired a chemical fire engine on a ten-year lease at \$340.86 per year. Firstly, the chemical engine lost utility given that the waterworks was better suited against most fires. Secondly, the small hose wagon in tow carried insufficient hose to reach from hydrant to fire site. The balance of the hose required came with additional reels, which firemen moved manually and too slowly for some fires. In 1896 Thomas H. Noxon “characterized [the chemical] as a ‘comical engine’ and as entirely useless except in rare instances, where the fire is located nearby and is in an incipient stage. It was a farce dragging that engine to the outskirts *with one reel of hose, and leaving the firemen to follow with the balance of the hose.*”

In 1898 the council ended its lease of the chemical engine and replaced it with a large horse-drawn hose wagon that carried 1,500 feet of hose *and had chemical capabilities* — “two Babcock Fire Extinguishers attached, one on each side, which [could] be lifted off and carried anywhere. About nine o’clock last night the fire alarm sounded and the brigade turned out to test the wagon. It proved very satisfactory as 1,000 feet of hose was laid out just as fast as the horses could run.”

In 1927 the town upgraded the Fire Brigade’s kit with a purchase of two motor

engines, both made by a local firm, the *Lorne Fire Engine Company*. One was a *pumper* engine, and the other a ladder truck. The pumper's gift was to boost water pressure received at the hydrant. In one test, at Oxford and King Streets, the pumper accepted water from the hydrant at 40 pounds pressure and boosted it to 135 pounds at the end of the hose and with a ¾ inch nozzle. The pumper also had chemical apparatus.

Low Water Pressure at the Fire Site: Winter Weather and Human Error. The following excerpts from the *Ingersoll Chronicle* document how winter weather and human error were culprits in some low-water-pressure events.

- *Weather*. In March, 1894, drifting snow stopped up the creek feeding the waterworks pond, causing the water level in the pond to drop and stopping water power for the pump house. Thus "Mr. Goble, who was in charge of the pumping station, stated that sufficient water could not be obtained from the pond ... to maintain the required pressure or keep the standpipe properly filled, and that he had advised Mr. Duncan on Friday ... that there was not sufficient water to supply the pumps for fire duty, and that Mr. Duncan should advise your committee so that the steam fire engine could be kept in readiness for immediate service." "Under the present conditions," confirmed Thomas Noxon, Councillor, "the town is liable during the winter season to be completely deprived of the supply of water from the stream, and in case of fire the waterworks would be practically useless." In August, to prevent another such occurrence, the Waterworks Company drilled a well to supplement water supply for the pond.
- *Human error*. In 1892 fire destroyed the residence of Mr. J.H. Berry, due "to a delay in obtaining a sufficient supply of water, and also a delay in obtaining pressure at the [standpipe] pumping station. By one councillor's account, water pressure from the standpipe was light because standpipe had only 17 feet of water when the fire broke out, in turn because staff at the standpipe were pumping water into a couple of engines at the station. Secondly, men at the pumping station were "down town" and away from the station at the time, and hence could not provide the pressure required. Thirdly, the long hose required to reach the fire from the nearest hydrant had "burst three times, necessitating new lengths put in and thereby causing delay." Lastly, "the firemen have not had their monthly practice lately as required and for which they are paid."
- *Human error*. In September, 1895 fire left Partlo's Grist Mill in ashes. The Deputy Reeve, Walter Berry, "criticized the waterworks system ... which he said was unable to throw a stream to the second story of the burning mill. We actually have poorer fire protection now than we had with the [steam fire] engine. On the night of the late conflagration he was informed by a reliable person that the standpipe only registered 40 at the fire hall when the firemen left it." Mr. Duncan was heard with reference to the statements made by Mr. Berry. He said when the alarm was given the standpipe was nearly full. He understood all the hydrants threw good streams with the exception of the one at the back of the mill, and the

fault in that case might have been with the firemen rather than with the system. The standpipe was pumped full twice every day, sometimes three times."

- *Human error.* Investigation in November, 1897 found five hydrants frozen, "because of the water standing in the pipes, which should pass off through the drip hole." The mayor blamed the Waterworks Company which was contractually bound to have the "dead ends" blown out once a month."
- *Human error.* Shortage of coal at the pumping station in 1899. On Sunday "the engineer had to skirmish around for a few blocks of wood for the engine. This had been a common occurrence for a few years" Under agreement with the Waterworks Company "the water pressure should be kept up to 65, while from the report presented tonight it will be notices that the pressure registered at the fire hall is frequently 35 or 40 and nine times out of ten there is no fuel at the pumping station. If this state of affairs is allowed to exist, who will be responsible in case of fire?"

The Insurance Underwriters' Association and Fire Brigade. The *Fire Insurance Underwriters' Association* classed the town of Ingersoll on a scale of A through E; the higher its rating, the lower the minimum tariffs that local agents could charge in competition with each other. In 1891, one year after Ingersoll's purchase of a waterworks, the *Fire Insurance Underwriters' Association* advanced the town from *Class C* to *Class B* (*first class appliances and waterworks*). The town declined to apply for *Class A* (*preferred*), which would have required it to purchase an "electrical fire alarm system" at a cost of from \$1,500 to \$2,000. Conversely, the town made do with its traditional method, whereby "the fire alarm is given on church and school bells, which are all supplied with ropes hanging within reach of anyone noticing a fire. The main alarm is at the town hall and the bell pull is within reach of one of the two policemen, one of which is constantly on duty night and day." In this fashion, the different church and school bells signalled the town hall and fire brigade with news of the fire and its approximate location.

The Association policed the Ingersoll's Class B rating with regular inspections. 1894, for example, the Council's *Fire, Water & Gas Committee* "added four fully-paid officials to the brigade to meet the requirements of the Underwriters' Association." In 1898, the Association's inspector flagged deficiencies that required remedy: "*Five men required to sleep in fire station, only two there now, three sleep within fifty yards and three others within one hundred yards ... The chief of the fire brigade is not a fully paid man, as is required by the standard. There are only four instead of five full paid firemen.* Its inspector's report for 1898 included a "*Test without previous notice — Gave alarm from fire bell at 9:15 a.m., chemical engine with reel and 6 men out at 9:15½, hook and ladder truck soon after, one 200 ft. line throwing water 9.17¾, two such 9.20¼, distance thrown by the two 110 ft. horizontally, standpipe pressure only, nozzle 1¼ inch. Chemical engine discharged satisfactorily.*"

The Association's requirements for Class B evolved. For example, an electric fire alarm system had not been a requirement for Class B in 1891, but by 1896 it was becoming one. The inspector's report of "Deficiencies for Class B" in 1898 noted "*No electric fire alarm; no automatic bell. Estimates are being procured, and it is expected*

*that a satisfactory electric system will shortly be installed to operate the general alarm bell, and suitable gongs in six firemen's houses.*

Ingersoll's Factory Fire Brigades. By the 1870s Ingersoll's two major manufactories each had a private water supply. *Noxon's* noted a local historian, "had a 14,000-gallon tank, perched 30 feet high with pipes under floors leading to every part of their works ... The next best protected works was the *J.L. Grant Packing Company*, which had 150 feet of one-inch hose with a force pump connected to two good wells, one under the office and the other under the engine room." After 1890, however, these companies had access to hydrants and the town's water supply.

In these altered circumstances, J.L. Grant's pork packing business started its own fire brigade. "For the better protection of the mammoth buildings used by *Messrs. J.L. Grant & Co.*", reported the *Chronicle* in 1891,

the employees of the firm have organized a fire company, consisting of 20 men ... The company has a hose reel and 500 feet of hose, and will have a fire hall and hose tower. Every man lives within sound of the alarm and in the event of fire can be on hand in a very short space of time. The company will also attend fires in different parts of town, and will be a valuable acquisition to our already excellent system of fire protection." In 1899 The *Noxon Manufacturing Company* organized a "fire department consisting of four men and the foreman of each department of the works. The company has had two splendid drills by sections, and quick time was made of each occasion ... The first practice took place on Monday evening of last week, each section proceeding to the various hydrants to see which could throw the first stream. Monday night the practice was with dry hose, making certain tests at coupling, etc. The best time made by one section was 35 seconds.

Tournaments motivated local brigades to sharpen their skills. In 1900, for example, the programme committee for Ingersoll's *Old Boys' Reunion* organized a "Fireman and Band Tournament" in Victoria Park with generous prizes to draw entries from other towns:

- Hose Reel Race, cash prizes, \$100, \$50, and \$25
- Band Competition, cash prizes, \$100, \$50, and \$25
- Firemen's Fancy Drill, cash prizes, \$50, \$30, and \$20
- Largest number in any one company in uniform and best appearance, prize valued at \$15.
- Company or department bringing the handsomest piece of apparatus, either for parade purpose or actual service, \$20.
- Company bringing the largest band, \$15.
- Largest chief of any fire department in procession, gold headed cane, value \$30.
- Smallest chief in procession, gold headed cane, value \$15.

## Summary of Chapter Findings

- Millponds and creeks supplied water for Ingersoll's fire protection until 1890, when the town purchased a waterworks for fire protection and domestic use. From 1890 to 1930, the water supply came from springs in West Oxford Township, outside the town. After 1930 deep wells, drilled within the town limits, supplied the town's water.
- Water supply from Ingersoll's millponds and creeks sometimes was wanting when fires erupted.
- "Tanking the town" in water-scarce parts of town, or mill-stream locations subject to low-water episodes, supplemented water supply from the ponds and streams. Maintaining the wood tanks and keeping them filled were done inconsistently.
- Fires of the 1850s sparked Ingersoll's establishment of a Fire Brigade and purchase of two hand-pump fire engines.
- Ingersoll's Great Fires of 1872 and 1874 made fire protection a high-priority issue for the town council. The town became less combustible after the "great fires" cleaned out tenements and rookeries from the town core. Municipal by-laws of 1867 and 1872-73 set fire limits around the core, within which was prohibited the erection of wooden buildings.
- In 1873, the Town declined to purchase a waterworks for fire protection which would have drawn on Smith's upper and lower millponds for water supply.
- Having rejected a waterworks for fire protection, the town mechanized its fire service with the steamer (1873) and the chemical engine (1886).
- The Fire brigade became smaller as horses replaced firemen for getting the appliances to the site of a fire (1886 for the steamer, 1889 for the chemical).
- The Town professionalized its fire service between 1878 and 1885.
- Arson was an ongoing problem, its dimensions unknown.
- From its inception in 1883, the Fire Insurance Underwriters Association, a cartel of 30 Fire Insurance Companies, set minimum rates, based upon the quality of the town's fire-fighting appliances. Ingersoll progressed from Class "D" to "C" in 1886 and to "B" in 1891. In 1885 the Association set higher minimum rates for high-risk industries, such as foundries and planing mills.
- Inspectors of the Underwriters' Association set detailed requirements for the Town's class, such as the number of firemen required to live in the fire hall and defects that required remedy.

- Agents of the fire insurance companies were free to price insurance above the cartel's minimum. Goad's Fire Insurance Plans, 1876-1935, helped agents to price insurance according to the level of hazard of the buildings to be insured.
- Both the steamer-based system of fire protection (1873) and the waterworks (1890) sometimes worked imperfectly. Faulty equipment, human error, and shortages of water were causes.
- From the 1870s into the 1940s, Ingersoll discharged sewage into storm sewers, cess pools and septic tanks, and down creeks and into the Thames River. The town declined to adopt a system for treating sewage until 1947.