



SAUGATUCK TOWNSHIP FIRE DISTRICT

Proudly serving : Douglas | Saugatuck | Saugatuck Township



3342 Blue Star Highway
Saugatuck, MI 49453
Phone: 269 857-3000
E-mail: Office@saugatuckfire.org

FIRE CODE BOARD of APPEALS MEETING

4:30pm – February 4th, 2020

AGENDA

1. Call to Order / Roll Call:
2. Reminder: It is requested that the board silences cell phones and put them away for the duration of the meeting.
3. Approval of Agenda (*additions / deletions*):
4. Approval of Minutes:
 - A. **January 27th, 2020**
5. Public Comment on Agenda Items Only (Limit 3 minutes):
6. Unfinished Business:
 - A. **Consider Appeal of NORTSHORES OF SAUGATUCK, LLC**
 - i. **Presentation by the Applicant or designee.**
 - ii. **Presentation by the Fire Code Official or designee.**
 - iii. **Questions from Board Members**
 - iv. **Discussion among Board Members**
 - v. **Action by Board**
7. New Business:
 - A. **None**
8. Public Comments: (Limit 3 minutes):
9. Board of Appeal Member Comments:
10. Adjournment:

NOTICE

This facility is wheelchair accessible with accessible parking spaces available. Request for accommodations or interpretive services must be made 48 hours prior to this meeting. Please contact Saugatuck Township Fire District at 269-857-3000 for further information.



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FIRE CODE BOARD of APPEALS MEETING

3:00pm – January 27th, 2020

DRAFT MINUTES

1. Call to Order / Roll Call:
 - Meeting called to order by Chairperson Miller at 3:00pm**
 - PRESENT: A. Miller, E. Beckman, J. Verplank**
 - ALSO PRESENT: Chief Greg Janik, Deputy Chief Chris Mantels**
 - ABSENT with Notice: None**
2. Reminder: It is requested that the board silences cell phones and put them away for the duration of the meeting.
3. Approval of Agenda (*additions / deletions*):
 - A. **Motion by Verplank, 2nd by Beckman to approve the agenda as presented. No discussion, motion carries unanimously.**
4. Approval of Minutes:
 - A. **December 6th, 2019**
 - Motion by Beckman, 2nd by Verplank to approve the minutes of the 10/6/2019 meeting as presented. No discussion, motion carries unanimously.**
5. Unfinished Business: None
6. New Business:
 - A. **Election of Chair and Vice Chair**
 - i. **Motion by Verplank to make Miller Chair Supported by Beckman. All approve, motion carries unanimously.**
 - ii. **Motion by Verplank to make Beckman Vice-Chair Supported by Miller. All approve, motion carries unanimously.**
 - B. **Public Hearing to Consider Appeal of NORTHSHORES OF SAUGATUCK, LLC**
 - i. **Open Hearing (Chair)**
 1. **Chair Miller will open hearing, and begin with presentation by applicant or designee, limited to 20 minutes. Then will allow presentation by Fire Code Official, or their designee, limited to 20 minutes. Then will allow the public or other parties to comment, limited to 5 minutes each.**
 - ii. **Presentation by the Applicant or designee.**
 1. **Northshores of Saugatuck LLC case for Lot 15 was presented by Attorney Carl Gabrielse. (See attached PowerPoint)**
 - iii. **Presentation by the Fire Code Official or designee.**
 1. **Chief Janik and Deputy Chief Mantels presented the Fire District's case. (See attached PowerPoint)**
 - iv. **Presentation by other parties**
 1. **Doug Denblekyer - Chief of the Graafschap Fire Department. In full support of the Fire District's proposal for a pressurized water supply to prevent another Laketown fire from 2007.**
 2. **Dave Burdick – 385 Fremont in Douglas – Home Fire Sprinkler Coalition**
 - a. **Homes burn, new or old.**
 - b. **Most fires are caused by people in the home.**
 - c. **Fires can be deadly in less than 3 minutes.**



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- d. New lightweight construction techniques lead to faster floor failure.
 - e. If requirement were to be relaxed, and someone is injured or killed, that will come back to haunt the fire district, and the three communities.
 - f. If something can be adequately solved by writing a check, there is no problem.
 - g. Only the health and safety of the community should be in the equation, not profitability.
3. Cynthia McKean – City of Saugatuck
 - a. The issue is not a spat between the developer and Fire District.
 - b. Decisions made after hearing is closed will affect the entire community.
4. Becky Bruns
 - a. Lives in Laketown
 - b. Referenced 2007 fire
 - c. Questioned what skills or experience the developer, or their attorney have in fighting fire.
 - d. Is concerned that the developer wants to privatize profits, and communitize the costs.
5. Dave Haverdink – Chief of Hamilton Fire
 - a. No one can change time, and distance
 - b. Was present for the fire in 2007.
 - c. Couldn't bring in water quick enough.
 - d. Had to abandon position because ran of water
 - e. How can we best deal with time and distance to facilitate best protection for the community.
- v. Discussion
 1. Discussion between the board ensued.
 - a. E. Beckman offered his comments.
 - b. J. Verplank offered her comments.
 - c. A. Miller offered his comments.
 2. Beckman and others would like to see PUD document and would like to see the development in person.
 3. Carl Gabrielse – the Fire District voiced concerns with the Townships water supply. Not in the purview of the Fire District or the appeals board to redo a consent agreement. Not in the purview of the Fire District to compare developments. That would be between the developer and the Township with the approval of the planned unit development that has already occurred. We are proposing to build a house, on one lot, and the one item that is holding up construction is the site plan review from the Fire District. The entire development PUD was approved by the Township, with an emergency and firefighting layout in it. The Township contacted the Fire District. The Township, who is the direct authority approved that plan with the dry hydrants around the boat basin. That has all been approved. No way Northshores would be able to run dry hydrants through the federal channel.
 4. Chris Mantels – all developments are required to follow the 400-foot requirement. This prevents friction loss by pumping water 3,000 feet away. As far as Mr. Gabrielse reference that we were involved in the review of the PUD, I would say his statement is incorrect. I was at the meeting, as Chief Janik was out of town. We were only ever asked if the marina would adversely affect our operations, the PUD had already been



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approved before we were asked to comment. We could not explain what and where the dry hydrants were placed and what is in the PUD, or what was approved by the Township. If it is true that all of this was already approved in the PUD, then why don't they already have a building permit, and why are they waiting on us? Obviously, the Township is relying on Fire District input for a viable fire protection water supply rather than letting planning commissioners that don't fight fire approve a water supply. Lastly, I would offer that not being able to dry hydrants in a navigable waterway was actually brought up by Chief Janik to Mr. Bosgraaf, and he said that was not an issue because they own the land and already won that lawsuit.

5. Chief Janik – we never approved a water supply. We want to work this out together.

vi. Close Hearing (Voice Vote)

1. Motion by Verplank 2nd by Beckman to close public hearing. No discussion. Motion carries by unanimous voice vote.

vii. Action by Board

1. Motion by Verplank, 2nd by Beckman to table until 2/4/2020 with a public meeting a 4:30pm at the Fire District, with a site visit at 3:30pm. No discussion. Motion carries by unanimous voice vote.

7. Public Comments: (Limit 3 minutes):

- A. **Becky Bruns** – if Northshore prevails on Lot 15, that this decision will become precedent for all future parcels and developments.
- B. **Chief Greg Janik** – we are the subject matter experts, not the Township, not the attorney, and not the developer. Chief will support all of his personnel in the fire service. They can do this correctly and is hopeful they will have 2nd thoughts and do the right thing. Decisions the BOA makes will affect decisions for the next 100 years. Might as well take the water supply code and throw it right out, just eliminate it, Because the reality is it will be embellished, used, plagiarized, you will be setting a precedent. But I still believe they will at least look at doing the right thing and installing a pressurized water supply. It can be engineered; it can be done to do the right thing.
- C. **Cynthia McKean** – what if there is not a marina? There were 20 items that need to be addressed. It was a preliminary approval; they do not have full approval yet. What about global warming?
- D. **Richard Kirk** – Thank you twice for allowing him to speak. Illinois resident. Over 40 years in Michigan. Based on all evidence presented by Fire District, and the developers counsel, the District did NOT misinterpret the code as it is ultimately their call on what is adequate. The White Star Line, the builders of the Titanic had exceeded the safety requirements, but no one thought about the what ifs.

8. Board of Appeal Member Comments:

- A. **Verplank** – so the decision is if the fire department overstepped their decision in this matter rather than the minimum. Wants to see the best for the community, not just the minimum.
- B. **Beckman** – Been asked if 1142 applies, or if IFC applies. Also been asked if the existing dry hydrants can support needed water supply. Wants to see the PUD so we are not back here again. Supports writing a letter to Mr. Padnos suggesting the best fire protection possible.
- C. **Miller** – scope is whether or not the Fire District correctly interpreted the code. Not to determine whether or not a pressurized water system is required.

9. Adjournment: Meeting adjourned at 4:44pm.

108.1 *Board of appeals established.* In order to hear and decide appeals of orders, decisions or determinations made by the fire code official relative to the application and interpretation of this code, there is hereby created a board of appeals comprised of three (3) members of the Fire Administrative Board. Elected or non-elected officials may be appointed to serve as members of the board of appeals in

ADMINISTRATIVE TO AMM
OFFICE (10/10/10) M...
10/10/10

108.2 *Limitations on authority.* An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply, or an equivalent method of protection or safety is proposed. The board shall have no authority to waive the requirements of this code.

ADMINISTRATIVE TO AMM
OFFICE (10/10/10) M...
10/10/10

108.3 *Qualifications.* The board of appeals shall consist of members who are qualified by experience and training to pass on matters pertaining to hazards of fire, explosions, hazardous conditions or fire protection systems.

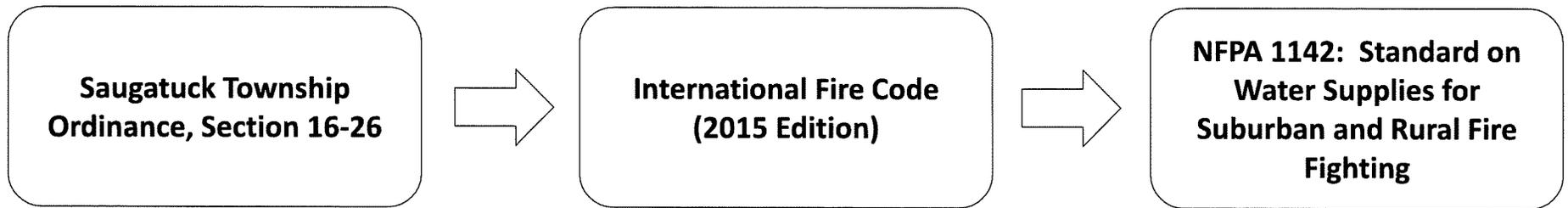
ADMINISTRATIVE TO AMM
OFFICE (10/10/10) M...
10/10/10

FINDING #1

We, the Board of Appeals, find that NFPA 1142 should be applied to Lot 15. With approximately 150 persons per square mile, Saugatuck Township is a “rural” area (NFPA 1142 § 3.3.20) and Lot 15 is not served by a municipal water supply system (NFPA 1142 § 3.3.20).

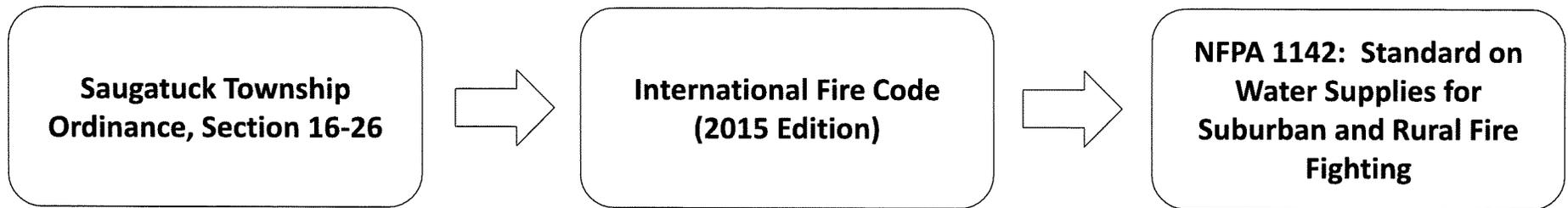
FINDING #2

We, the Board of Appeals, find that the existing dry hydrants located near Lot 15 constitute an acceptable alternative water supply under NFPA 1142 capable of providing sufficient water flow (i.e., more than 500 GPM) to fight a potential fire in the residential home proposed on Lot 15 (NFPA 1142, § 1.1.1, 4.2).



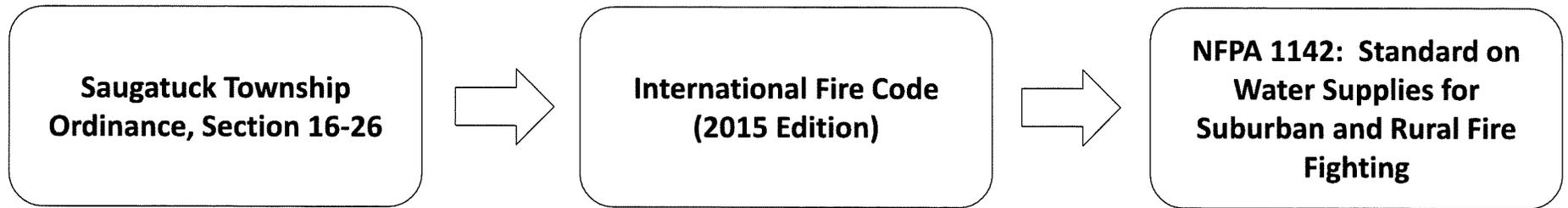
“Pursuant to authority granted by law, the International Fire Code, 2015 Edition, including all appendices, except Appendix A, ... is adopted as the Fire Code of the Township of Saugatuck ... as if fully set out in this ordinance”

Ord. Sec. 16-26



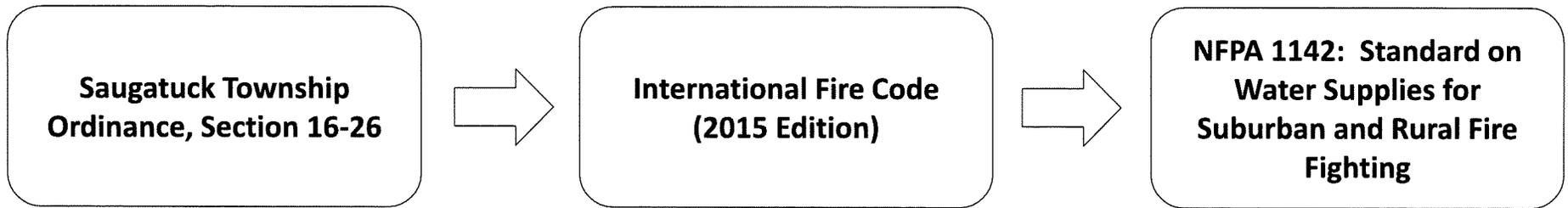
“For information regarding water supplies for fire-fighting purpose in rural and suburban areas in which adequate and reliable supply systems do not exist, the fire code official is authorized to utilize NFPA 1142 ...”

IFC B103.3



“This standard identifies a method of determining the minimum requirements for alternative water supplies for structural fire-fighting purposes in areas where the authority having jurisdiction determines that adequate and reliable water supply systems for fire-fighting do not otherwise exist.”

NFPA 1142 1.1.1



“In locations where adequate municipal-type water systems are not provided and additional fire protection is needed, minimum water supplies shall be established in, or transportable to, the designated area.”

NFPA 1142 7.1.5

Rural: “Those areas that are ... sparsely populated with densities below 500 persons per square mile”

Suburban: “Those moderately inhabited areas with population densities of at least 500 persons per square mile but less than 1000 persons per square mile.”

NFPA 1142 3.3.20, 3.3.22

National Fire Protection Association (NFPA) 1142 is not applicable, as there is a water supply available; Lake Michigan and the Kalamazoo River. The only reference to NFPA 1142 in the Fire District's site plan review #1 is in relation to the design, construction, and maintenance of the

“...adequate and reliable supply systems do not exist...”

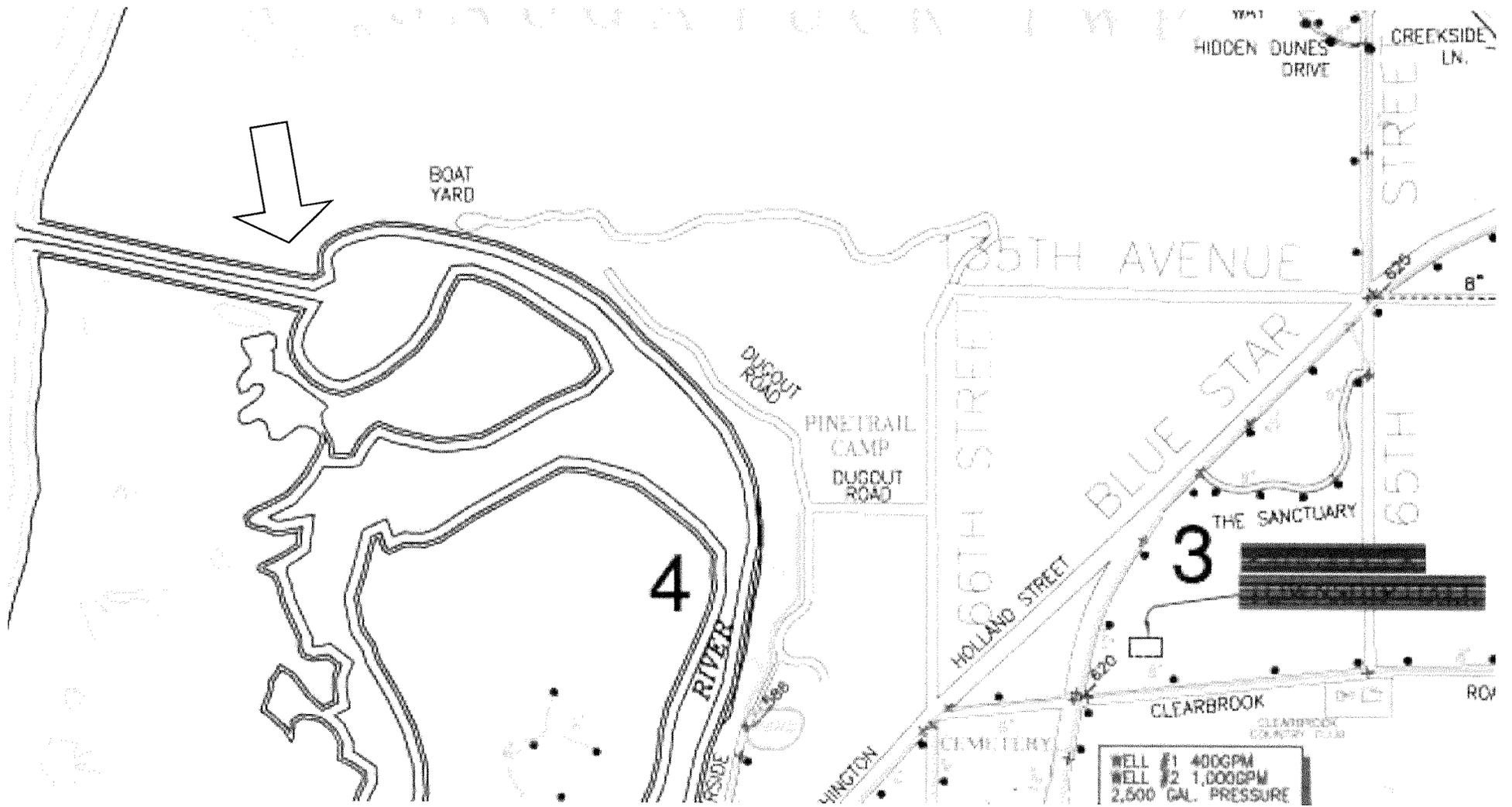
IFC B103.3

“...adequate and reliable water supply systems ... do not otherwise exist...”

NFPA 1142 1.1.1

“...adequate municipal-type water systems are not provided ...”

NFPA 1142 7.1.5



National Fire Protection Association

NFPA 1142: Standard on Water Supplies for Suburban and Rural Fire Fighting



Fire Apparatus
& Emergency Equipment

Rethinking Rural Water Supplies

dwelling, etc., depending on the types of construction you encounter in your response district. You will find that for average-sized single-family dwellings, the required flow rate is 250 gpm and the total water supply needed is around 2,500 gallons. For larger dwellings, the flow rate will generally be in the 500-gpm range and the total water required is 10,000 gallons or less. These types of structures represent the bread-and-butter

incident

Floor Area = Sq Ft
 Second Floor = Sq Ft
 Third Floor = Sq Ft
 Ceiling Height =
 Area Height =
 Area Height =
 Area Height =
 Total Cu Ft = DHC =
 Gallons = OCN = Gallons =
 Gallons =

Total Sq Ft =
 Total Cu Ft =
 Gallons =
 Gallons =
 Gallons =

6.2.2 For dwellings, the maximum construction classification number shall be 1.0.

Required Flow =
 Required GPM's =



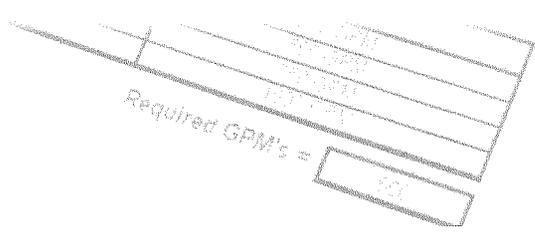
Total Cu. Ft. = **69,030** OHC = **7** Gallons = **9,861**



Additional exposure. (Example: 1.0 + .5 + .5 + .5 = 2.5 exposure factor for 3 exposures.)

Total Gallons Required	GPM Flow
Up to 2,499 Gallons	250 GPM
2,500 to 9,999 Gallons	500 GPM
10,000 to 19,999 Gallons	750 GPM
20,000 or more	1000 GPM

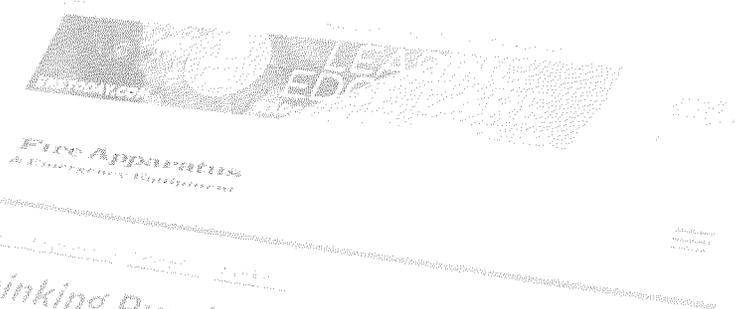
Required GPM's = **500**



“The fire department operating without a water system ... has the following three means of getting adequate water for fire fighting:

- 1) From supplies at or near the incident scene, which can be either constructed or natural supplies
- 2) From supplies transported to the scene, and
- 3) By relaying water from a source to the fire scene using large-diameter hose “

NFPA 1142 B.1



Rethinking Rural Water Supplies

For the higher flow rates. Know the hose loads of your apparatus and any incoming mutual aid apparatus. Four-inch hose can effectively deliver 1,000 gpm through a 1,000-foot hoselay or 500 gpm through a 4,000-foot hoselay using a single pumper at the source.

Since this supply will take some time to set up, initial attack will be done with tank water. Equipped with a commander, the delivery of the hose that must be addressed by the incident control and extinguish the fire is a

FINDING #1

We, the Board of Appeals, find that NFPA 1142 should be applied to Lot 15. With approximately 150 persons per square mile, Saugatuck Township is a “rural” area (NFPA 1142 § 3.3.20) and Lot 15 is not served by a municipal water supply system (NFPA 1142 § 3.3.20).

FINDING #2

We, the Board of Appeals, find that the existing dry hydrants located near Lot 15 constitute an acceptable alternative water supply under NFPA 1142 capable of providing sufficient water flow (i.e., more than 500 GPM) to fight a potential fire in the residential home proposed on Lot 15 (NFPA 1142, § 1.1.1, 4.2).



SAUGATUCK TOWNSHIP FIRE DISTRICT

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Fire Code Board of Appeals

6736 Saugatuck Beach Rd.
Northshores of Saugatuck LLC



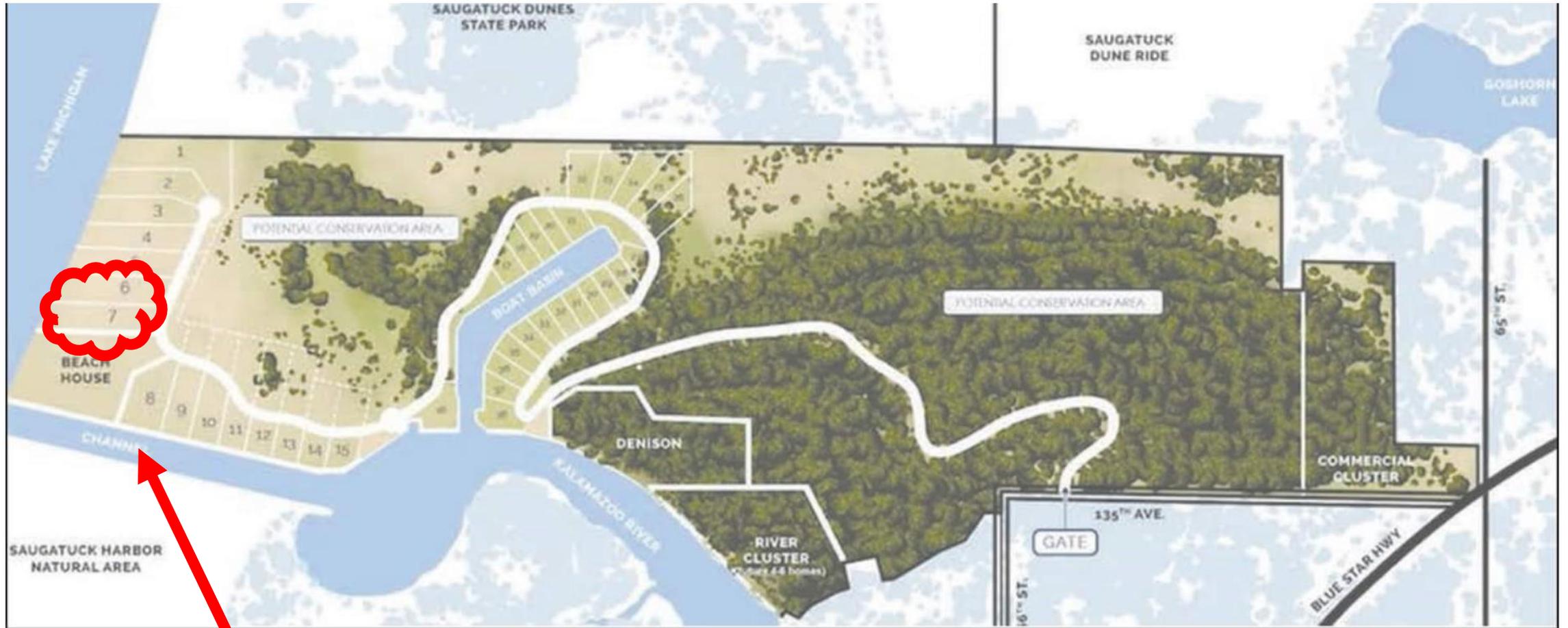
Presented by Chief Greg Janik and Deputy Chief Chris Mantels
January 27th, 2020 – 3:00pm



Mission Statement

THE MISSION OF THE SAUGATUCK
TOWNSHIP FIRE DISTRICT IS TO
MINIMIZE COMMUNITY RISKS AND
IMPROVE THE QUALITY OF LIFE FOR
ALL PERSONS WITHIN THE
SAUGATUCK TOWNSHIP FIRE
DISTRICT

Northshores of Saugatuck - Site View



The two existing homes on Lots 6 & 7 have NO fire protection water supplies

6736 Saugatuck Beach Road (Lot 15) - Site Plan

Square Footage

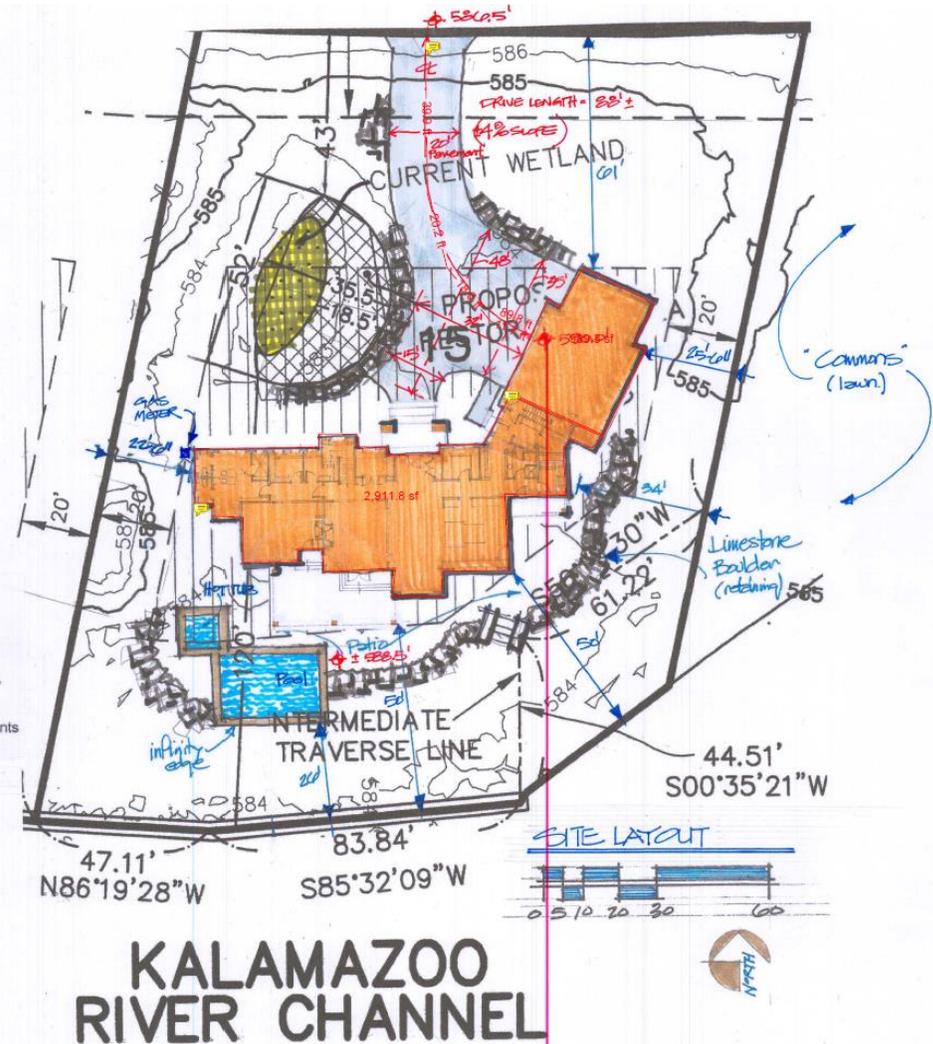
- 1st Floor - +/- 2,900ft²
- Garage - +/- 1,000ft²
- 2nd Floor - +/- 2,400ft²

Total

+/- 6,300ft²

Site Notes:

- Driveway pavement minimum with 20'-0"
- Maximum driveway grade, 10%
- Minimum driveway height clearance, 13'-6"
- Driveway base & finish course minimum weight capacity, 80,000 lbs.
- Address signage (green reflective) to be posted prior to construction, per Saugatuck Twp. Fire District requirements.
- Key box per Saugatuck Twp. Fire District requirements.



PRR Architecture / Design LLC
 10000 1st Street
 Grand Rapids, MI 49503
 616.221.1111
 www.prrarch.com

a new residence for
NORTHSHORE of Saugatuck
 Project 15
 6736 Saugatuck Beach Road

10 October 2019 - Preliminary Design
 22 October 2019 - Revised Preliminary
 24 October - Site Revision
 29 October - Site Notes



6736 Saugatuck Beach Road (Lot 15) - Site View

The image is a screenshot of the Allegan County Parcel Viewer 2.0 interface. At the top, the title bar reads "Allegan County Parcel Viewer 2.0" and includes a search bar with the text "Parcel Search by: Number, Owner, or Address". The main view is an aerial photograph of a construction site. A blue line with green circular markers at its endpoints is drawn across the site, representing a proposed path or boundary. A white measurement window is overlaid on the left side of the image, with a red cloud-like border. It displays "Measurement Result" and "798.6 Feet". A red arrow points from the text "6736 Saugatuck Beach Rd. (Lot 15)" to a specific location on the aerial view. Another red arrow points from the text "Two - 6\" Dry Hydrant(s)" to a vertical structure on the right side of the site. In the bottom left corner, there is an inset site plan showing property boundaries, lot numbers, and various annotations. The page number "Page 26 of 63" is visible at the bottom center.

Allegan County Parcel Viewer 2.0 Parcel Search by: Number, Owner, or Address

Measure

Feet

Measurement Result

798.6 Feet

6736 Saugatuck Beach Rd. (Lot 15)

Two - 6" Dry Hydrant(s)

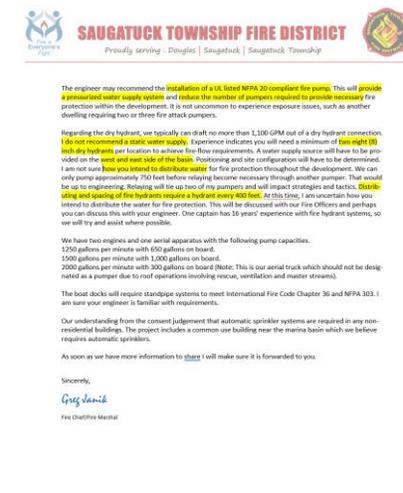
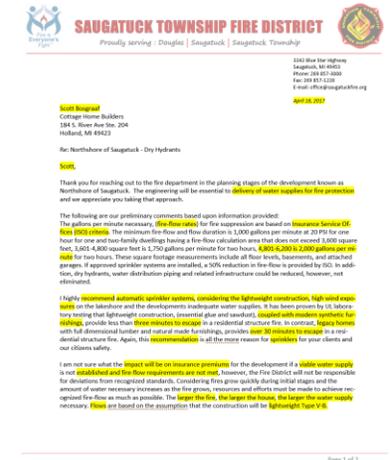
Page 26 of 63

6736 Saugatuck Beach Road – Plan Review

- As indicated in our plan review, the dry hydrants within 400 feet of the dwelling are only being considered for this particular home on Lot 15, at 6736 Saugatuck Beach Road.
- The balance of the Northshores of Saugatuck development, including other parcels and proposed dwellings, has not been reviewed yet, and will be reviewed on a case by case basis.

April 18th, 2017 Letter – re: Water Supply Concerns

- Our concerns, and future requirements were made clear to developers representative Scott Bosgraaf in April of 2017.
 - “2,000 GPM was specified for homes 4,801-6,200 ft²”
 - “A static (dry hydrant) water supply is not recommended”
 - “The engineer may recommend the installation of a UL listed NFPA 20 compliant fire pump. This will provide a pressurized water supply system and reduce the number of pumpers required to provide necessary fire protection within the development.”
 - “Distributing and spacing of fire hydrants require a hydrant every 400 feet”



Property Owner Meeting – April 24th, 2019

- Chief Janik, Township Trustee/Fire Board Rep. Stacey Aldrich, and Township Treasurer/Trustee Jon Helmrich met with property owner Mr. Jeff Padnos
 - Mr. Padnos was informed of the Fire District's concerns
 - Mr. Padnos was informed of the suggestion from 2017 to install a UL listed fire pump and private fire service mains to provide the best possible water supply for fire protection to the development
 - Unfortunately, Mr. Padnos stated he had not been informed by his representative, Mr. Scott Bosgraaf of the letter from April 18th, 2017 outlining the Fire District's water supply concerns

Dry Hydrant Submittal from July 2018



The engineer may recommend the installation of a UL listed NFPA 20 compliant fire pump. This will provide a pressurized water supply system and reduce the number of pumps required to provide necessary fire protection within the development. It is not uncommon to experience exposure issues, such as another dwelling requiring two or three fire attack pumps.

Regarding the dry hydrant, we typically can draft no more than 1,100 GPM out of a dry hydrant connection. I do not recommend a static water supply. Experience indicates you will need a minimum of two eight (8) inch dry hydrants per location to achieve fire-flow requirements. A water supply source will have to be provided on the west and east side of the basin. Positioning and site configuration will have to be determined. I am not sure how you intend to distribute water for fire protection throughout the development. We can only pump approximately 750 feet before relaying become necessary through another pumper. That would be up to engineering. Relaying will tie up two of my pumps and will impact strategies and tactics. Distributing and spacing of fire hydrants require a hydrant every 400 feet. At this time, I am uncertain how you intend to distribute the water for fire protection. This will be discussed with our Fire Officers and perhaps you can discuss this with your engineer. One captain has 16 years' experience with fire hydrant systems, so we will try and assist where possible.

We have two engines and one aerial apparatus with the following pump capacities:
 1250 gallons per minute with 650 gallons on board.
 1500 gallons per minute with 1,000 gallons on board.
 2000 gallons per minute with 300 gallons on board (Note: This is our aerial truck which should not be designated as a pumper due to roof operations involving rescue, ventilation and master streams).

The boat docks will require standpipe systems to meet International Fire Code Chapter 36 and NFPA 303. I am sure your engineer is familiar with requirements.

Our understanding from the consent judgement that automatic sprinkler systems are required in any non-residential buildings. The project includes a common use building near the marina basin which we believe requires automatic sprinklers.

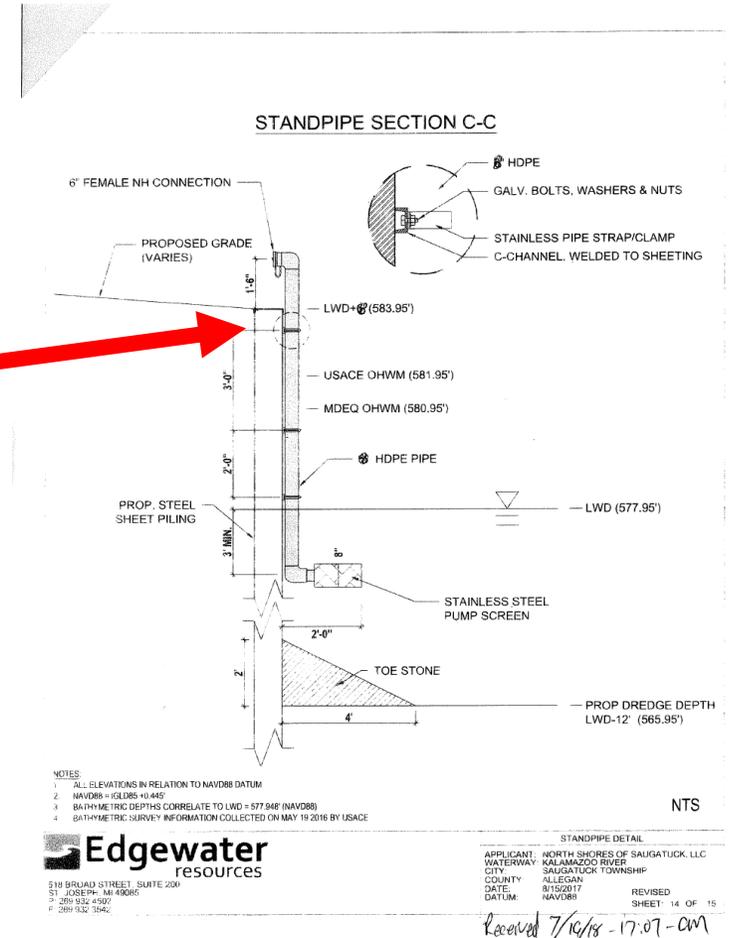
As soon as we have more information to share I will make sure it is forwarded to you.

Sincerely,
Greg Vanik
 Fire Chief/Fire Marshal

- 2017 letter indicated two 8" dry hydrants are needed to achieve required fire flow(s)

- Developer submittals appear to indicate 6", then altered to indicate 8"

- However, developer installed two 6" dry hydrants that have not been approved by the Authority Having Jurisdiction



Drafting at 6" Dry Hydrants

Drafting Setup

- Need 4 lengths of hard suction. *(No other development in the Fire District's coverage area require more than two hard suction hoses)*
- Our engines carry two lengths in compliance with NFPA 1901.
- Pumping for 3 hours at maximum capacity utilized 7/8 tank of diesel fuel.



Terminology?

- FDC is the acronym for Fire Department Connection. FDC's are used to augment sprinkler systems, not draft water
- Standpipe – is typically a wet/dry pipe hose connection, supplying water to upper floors of a high-rise structure.
- What is at the site, but incorrectly labeled by the developer, are “Dry Hydrants.”
- Signage shall be approved by the AHJ. This signage is incorrect and has not been approved. *(see examples of proper signage to right)*



Dry Hydrant – Engineer’s Review

- The vertical riser pipe is called out as HDPE pipe. This plastic pipe will be subject to gouging from actions such as ice coupled with waves along with the potential for accidental boat strikes. **Consider using stainless steel pipe instead.**
- The construction of the “stainless steel pump screen” in the detail will restrict flow so the details of how this is constructed, and its size is important. The bigger the better. We suggest the device be of woven wire construction instead of steel plate construction with holes drilled in it.
- The most likely failure mode is associated with foreign debris such as zebra mussels clogging or partially clogging the system. It could also take the form of trash such as a plastic bag that wraps itself around the intake screen or a fish, turtles, etc... Similarly, ice chunks coupled with wave action could damage the riser pipe and/or screen. We see maintenance, inspection and repair to be key factors in keeping these dry risers clean and ready for use.
- **One final thought, there will always be a potential failure of these types of devices.** For instance a perfectly clean dry riser could suck up a bag or a fish while in use that would restrict flow. However, the presence of any dry riser provides better protection than the lack of one.

Reasons we need an adequate water supply

- Men, women, and children are sleeping in these dwellings.
- 10-12-minute response time minimum
- Lightweight Type V construction, (essentially glue and sawdust).
- High wind exposures on the lakeshore
- Modern synthetic furnishings burn at a much faster rate and at much hotter temperatures, drastically reducing the amount of time to escape a residential structure fire.

Reasons we need an adequate water supply

- Large square feet structures exceeding 5,000 square feet
- Apparatus resource demands are excessive and unrealistic for a new development
- No automatic fire suppression sprinklers
- No hydrants, private fire service mains, pumps, or distribution system have been proposed by the current developer or owner
- Excessive hose lays

Time in Minutes

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45

Fire Starts

Smoke Alarm Sounds

Men, Women, and Children wake up and get out

2-4 Minutes

911 Call is Made

& Central Dispatch processes the call using standard protocol

3-5 Minutes

Crews Receive Page

Wake Up

Gear up

&

Depart Station

2-4 Minutes

Drive Time for 1st Fire Attack Engine to get from Fire Station at 3342 Blue Star Highway to 6736 Saugatuck Beach Road

This drive time may be further extended in adverse weather conditions

10-12 Minutes

Crews initiate fire attack

Onboard 650 Gallons of tank water is now empty and crews must halt firefighting operations

3-5 Minutes

2nd Engine Arrives

Begins laying 800 feet of 5" LDH from fire scene

back to Dry Hydrants and begins to establish water supply

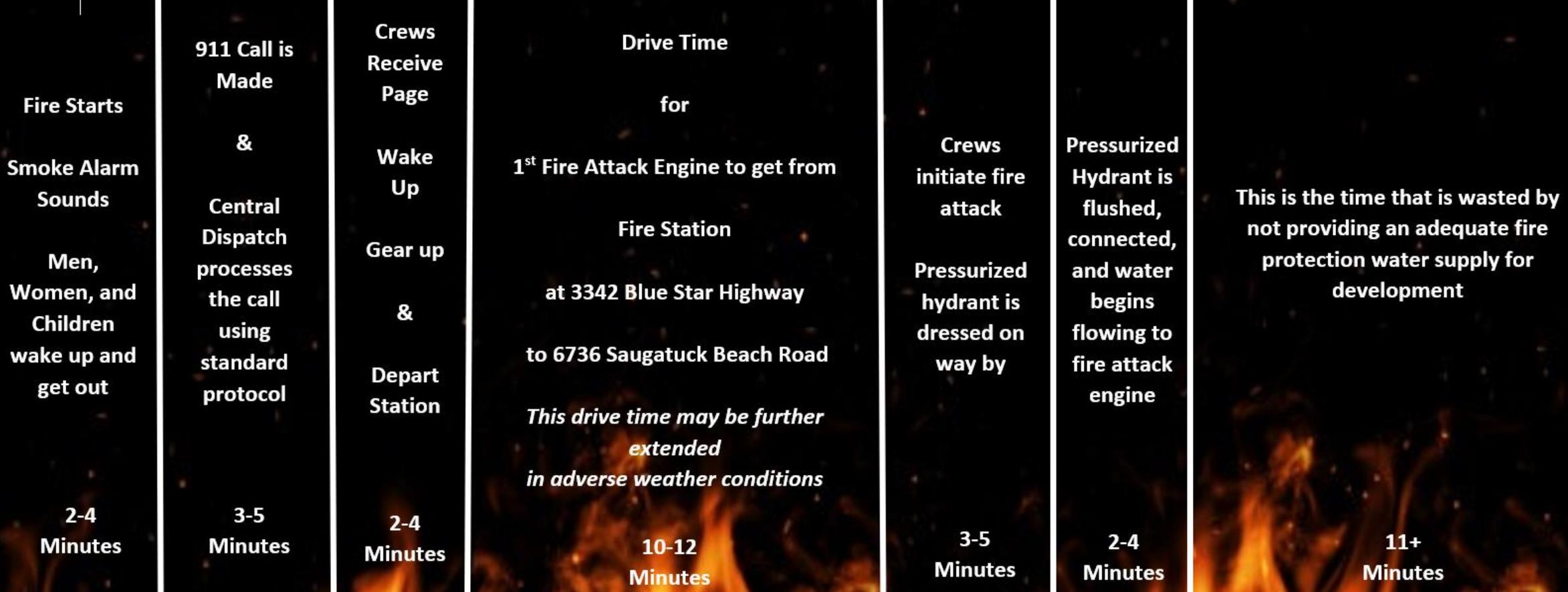
This requires four 10 foot lengths of Hard suction

10-15 Minutes

Static Water Supply Timeline

Time in Minutes

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45



Pressurized Water Supply Timeline

Only the Fire Code Official can interpret the code

SECTION 104

GENERAL AUTHORITY AND RESPONSIBILITIES

[A] **104.1 General.** The fire code official is hereby authorized to enforce the provisions of this code and shall have the authority to render interpretations of this code, and to adopt policies, procedures, rules and regulations in order to clarify the application of its provisions. Such interpretations, policies, procedures, rules and regulations shall be in compliance with the intent and purpose of this code and shall not have the effect of waiving requirements specifically provided for in this code.

International Fire Code – 2015 Edition

507.1 Required water supply.

An approved water supply capable of supplying the required fire flow for fire protection shall be provided to premises upon which facilities, buildings or portions of buildings are here after constructed or moved into or within the jurisdiction.

507.5.1 Where required.

Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 400 feet (122 m) from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided where required by the fire code official.

IFC Appendix B – Fire Flow Requirements

- Based on the approximate 6,300ft², the required fire flow is 2,250 GPM.
- We opted to give the benefit of doubt for 100 ft², and reduce it to the 4,801-6,200 square feet, thus the 2,000 GPM requirement

TABLE B105.1(2)
REFERENCE TABLE FOR TABLES B105.1(1) AND B105.2

FIRE-FLOW CALCULATION AREA (square feet)					FIRE-FLOW (gallons per minute) ^b	FLOW DURATION (hours)
Type IA and IB ^a	Type IIA and IIIA ^a	Type IV and V-A ^a	Type IIB and IIIB ^a	Type V-B ^a		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	3
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	4
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,500	6,000	
—	—	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
—	—	125,501-135,500	90,601-97,900	55,701-60,200	6,500	
—	—	135,501-145,800	97,901-106,800	60,201-64,800	6,750	
—	—	145,801-156,700	106,801-113,200	64,801-69,600	7,000	
—	—	156,701-167,900	113,201-121,300	69,601-74,600	7,250	
—	—	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
—	—	179,401-191,400	129,601-138,300	79,801-85,100	7,750	
—	—	191,401-Greater	138,301-Greater	85,101-Greater	8,000	

IFC Appendix B – Fire Flow Requirements

IFC B103.3 Areas without water supply systems.

For information regarding water supplies for fire-fighting purposes in rural and suburban areas in which adequate and reliable water supply systems do not exist, the fire code official is authorized to utilize NFPA 1142 or the International Wildland-Urban Interface Code.

Plan Reviewer Comments

As the AHJ, we determined that the NFPA 1142 standard does not apply as an adequate and reliable water supply exists; ie: Lake Michigan, the Kalamazoo River and the dry hydrants. The issue here is the distance from the dry hydrants exceeding 400 feet to the proposed home at 6736 Saugatuck Beach Road

IFC Appendix B – Fire Flow Requirements

- Only the Fire Chief, not the developer or their legal counsel, has the right to increase or decrease the fire flow requirements

SECTION B103 MODIFICATIONS

B103.1 Decreases. The fire chief is authorized to reduce the fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

B103.2 Increases. The fire chief is authorized to increase the fire-flow requirements where conditions indicate an unusual susceptibility to group fires or conflagrations. An increase shall not be more than twice that required for the building under consideration.

2015 INTERNATIONAL FIRE CODE®

Insurance Services Office (ISO)

- March 15th, 2018
 - Chief Greg Janik had a conference call with ISO field representatives and field supervisors
 - Due to size of buildings, ISO considered homes commercial
 - PPC rating for the District may be adversely affected
 - ISO considers these homes “McMansions”
 - ISO recommended fire flow of 2,200-2,500 GPM based on the size of the dwellings in the development

Does NFPA 1142 Apply?

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1142-1

WATER SUPPLIES FOR SUBURBAN AND RURAL FIRE FIGHTING

NFPA 1142

Standard on

Water Supplies for Suburban
and Rural Fire Fighting

2012 Edition

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Changes other than editorial are indicated by a vertical rule beside the paragraph, table, or figure in which the change occurred. These rules are included as an aid to the user in identifying changes from the previous edition. Where one or more complete paragraphs have been deleted, the deletion is indicated by a bullet (•) between the paragraphs that remain.

A reference in brackets [] following a section or paragraph indicates material that has been extracted from another NFPA document. As an aid to the user, the complete title and edition of the source documents for extracts in mandatory sections of the document are given in Chapter 2 and those for extracts in informational sections are given in Annex J. Extracted text may be edited for consistency and style and may include the revision of internal paragraph references and other references as appropriate. Requests for interpretations or revisions of extracted text shall be sent to the technical committee responsible for the source document.

Information on referenced publications can be found in Chapter 2 and Annex J.

Chapter 1 Administration

1.1 Scope.

1.1.1 This standard identifies a method of determining the minimum requirements for alternative water supplies for structural fire-fighting purposes in areas where the authority having jurisdiction (AHJ) determines that adequate and reliable water supply systems for fire-fighting purposes do not otherwise exist.

1.1.2 An adequate and reliable municipal-type water supply is one that is sufficient every day of the year to control and extinguish anticipated fires in the municipality, particular building, or building group served by the water supply.

1.2* Purpose. The purpose of this standard is to assist the AHJ to establish the minimum water supply necessary for structural fire-fighting purposes in those areas where it has been determined that there is no water or inadequate water for fire fighting.

1.3 Application.

1.3.1 This standard does not address fireground operational procedures dealing with the rate or method of water application.

1.3.2* This standard does not apply to the calculation of an adequate amount of water for large, special fire protection problems, such as bulk flammable liquid storage, bulk flammable gas storage, large varnish and paint factories, some plastics manufacturing and storage, aircraft hangars, distilleries, refineries, lumberyards, grain elevators, large chemical plants, coal mines, tunnels, subterranean structures, and warehouses using high rack storage for flammables or pressurized aerosols.

1.3.3 This standard does not exclude the use of this water for other fire-fighting or emergency activities.

1.4 Equivalency. Nothing in this standard is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety in place of those prescribed by this standard, provided technical documentation is submitted to the AHJ to demonstrate equivalency and the system, method, or device is approved for the intended purpose.

Chapter 2 Referenced Publications

2.1 General. The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2010 edition.

NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*, 2010 edition.

NFPA 13R, *Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height*, 2010 edition.

NFPA 220, *Standard on Types of Building Construction*, 2012 edition.

NFPA 285, *Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components*, 2006 edition.

NFPA 1963, *Standard for Fire Hose Connections*, 2009 edition.

2.3 Other Publications. Merriam-Webster's Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

2.4 References for Extracts in Mandatory Sections.

NFPA 1, *Fire Code*, 2012 edition.

NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*, 2010 edition.

NFPA 101®, *Life Safety Code®*, 2012 edition.

NFPA 1141, *Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas*, 2012 edition.

NFPA 1600®, *Standard on Disaster/Emergency Management and Business Continuity Programs*, 2010 edition.

NFPA 1901, *Standard for Automotive Fire Apparatus*, 2009 edition.

NFPA 1911, *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus*, 2007 edition.

NFPA 1925, *Standard on Marine Fire-Fighting Vessels*, 2008 edition.

NFPA 1961, *Standard on Fire Hose*, 2007 edition.

NFPA 5000®, *Building Construction and Safety Code®*, 2012 edition.

NFPA 1142 – 1.1.1 – Scope

This standard identifies a method of determining the minimum requirements for alternative water supplies for structural fire-fighting purposes in areas where the authority having jurisdiction (AHJ) determines that adequate and reliable water supply systems for fire-fighting purposes do not otherwise exist.

Plan Reviewer Comments

As the AHJ, we determined that the NFPA 1142 standard does not apply as an adequate and reliable water supply exists, Lake Michigan and the Kalamazoo River.

Even if NFPA 1142 was applicable...

4.1.3* The minimum requirements shall be subject to increase by the AHJ to compensate for particular conditions such as the following:

- (1) Limited fire department resources
- (2) Extended fire department response time or distance
- (3) Potential for delayed discovery of the fire
- (4) Limited access
- (5) Hazardous vegetation
- (6) Structural attachments, such as decks and porches
- (7) Unusual terrain
- (8) Special uses and unusual occupancies

NFPA 1142
Standard on
Water Supplies for Suburban
and Rural Fire Fighting
2012 Edition

It is still up to
the AHJ to
determine
their needs
for Fire
Protection
Water
Supplies

Developer Funded Watermain Extensions

57 developers have installed a total of **82,480 Feet** of Developer Funded Watermain Extensions within the Fire District tri-community coverage area.

(Based on information available to Fire District)

Douglas City		Saugatuck City		Saugatuck Township	
Development	Length in Feet	Development	Length in Feet	Development	Length in Feet
Westshore Woods	1175	Dune Grass	5700	Lakeshore Outfitters	20
Busscher Construction	500	Dune Grass River docks	20	Ravines Golf Course	16551
Summer Grove	2510	807 Lake St.	150	Hidden Dunes	992
Parkside Landing	1320	Saugatuck Townhomes	150	Kingfischer Cove	2105
Saugatuck Storage	800	Saugatuck High School	970	Northgate Mall	300
Wilderness Ridge	3192	Bayview Condos	525	Sanctuary Way	1876
Northern Lights	1545	Ridge View Lane	800	Old Singapore Trail	1200
Swing Bridge	665	Old Mill Heights	300	Gaslight Estates	3625
Harbor View	1395	Ridgewood Oaks	595	Maple Green	280
Douglas Elementary	800	Singapore Trail	600	Maple Gate	2069
Cider Hill	475	Wyrick	250	Oxbow	2125
Harbor Lake Rd.	1155	Eastshore Condos	1140	Southgate (exit 36)	1840
301-307 Wiley Rd.	180			Hawthorne Court	2376
Douglas Prof. Center	300		11,200.00	Timber Ridge Trail	1708
Harbors Apartments	300			Lake Trail	1520
Amity St.	1170			Old Walnut Lane	20
Wildwood	715			Clearbrook Court	510
Singapore Court	350			Sambroek Lane	1740
Westshore Golf Course	2700			Coppice Court	366
Tower Marine Storage	150			Eagle Ridge	1275
Mariners Cove	920			Beach Trail	290
Golf View Drive	1225			BuildSB/Northshores	1500
Meadow Argus	2450				
Enterprise Drive	1000				44,288.00
	26,992.00				
		Total between all 3 Municipalities		82,480.00	

Similarly-Situated Property

Dunegrass, the Preserve at the Lakeshore

Northshores of Saugatuck
6736 Saugatuck Beach Rd.
(Lot 15)

Dunegrass, the Preserve
at the Lakeshore

Developer installed over
5,000 feet of fire service
mains



Calculations are not an exact science...

- At a recent structure fire in the Township:
 - The dwelling was approx. 5,398 square feet
 - Only 810 square feet of the garage & bonus room was on fire upon arrival of first due engine at eight minutes from dispatch.
 - There was a hydrant in the front lawn of the dwelling
 - It took 8,900 gallons of water to extinguish the garage and bonus room fire due to modern construction and synthetic furnishings
 - The developer's legal counsel believes that 9,861 gallons is enough to extinguish the 6,300 square feet home on Lot 15.

Rural or Not?

- If in fact the Northshores of Saugatuck is rural:
 - Why did they run thousands of feet of natural gas line, at enormous expense, instead of using propane tanks?
 - Why did they run thousands of feet of communication lines for internet/tv, instead of using satellites?
- In our opinion, it appears the developer only wants to use the word “rural” when it is for their benefit

Development Costs

- Why should the taxpayer-funded fire engines, be utilized to provide the water supply for development?
- Whether public or private fire service mains, isn't that the cost of doing business and developing a property?
- Similar to installing electric, cable, internet, and natural gas utilities, wouldn't fire service mains be part of the infrastructure costs that should have been budgeted by the developer?
- What other development has been permitted to utilize the Fire Districts water tenders, and large diameter hose, to qualify for their fire protection water supply?

Dunegrass Developer Comments

- When asked about their feelings on installing fire protection water mains in a new development, the Dunegrass developer offered the following comment(s):

“Considering the magnitude of the development, the investment is easily justified.”

July 2007 – Lakeshore Fire

- Location was just over 2 miles North of the proposed home at 6736 Saugatuck Beach Road
- Fire burned for over 12 hours
- Destroyed 3 homes and over 50 acres of woods/sand dunes
- Took over 100 personnel, from 18 departments, and an estimated 1 million gallons of water to extinguish

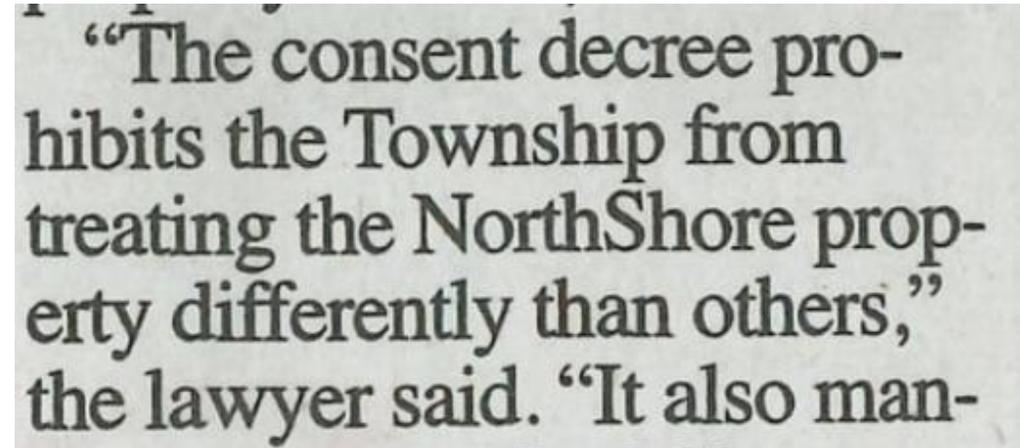


July 2007 – Lakeshore Fire



Consent Judgement

- Per the Terms of the Consent Judgement and Final Order, the Township is prohibited from treating the Plaintiff's property differently than similarly-situated properties within the Township without a rational basis for doing so.
- If we were to make an exception to allow the development to continue without an approved fire protection water supply, it would violate the terms of the Consent Judgement by treating the property differently.



“The consent decree prohibits the Township from treating the NorthShore property differently than others,” the lawyer said. “It also man-

Why did the Dunegrass (similarly-situated) development have to install water mains and fire hydrants, but not Northshores of Saugatuck?

Consent Judgement

Case 1:10-cv-00210-PLM Doc #199 Filed 06/11/12 Page 6 of 22 Page ID#2560

Terms of Consent Judgement

c) requiring, under Sec. 40-658(e) of the Township Zoning Ordinance, two means of access to Plaintiff's Property from an adjacent public street, provided that Plaintiff otherwise implements alternative safety requirements, as reasonably imposed by the Township, such as a standpipe system or the equivalent for emergency water needs, the use of sprinkler systems in any non-residential buildings and any buildings containing more than four dwelling units, the designation of a space along the Kalamazoo River adjacent to Plaintiff's Property for the exclusive use of a fireboat, and the designation of an emergency landing area for helicopters.

Fire District Legal Counsel Comments

- IFC is a Code, NFPA are guidelines; not the same thing
- Even under NFPA it is left to decisionmaker (AHJ) to determine if an “adequate” water supply is available or not. So long as the AHJ has a reasonable basis for that decision that should end the review (at least legally)
- Hydrant distance is based on IFC which is the applicable Code (see above)
- **All** of the developer's attorneys' arguments presume that NFPA 1142 and not IFC should be the basis for the Board’s decision; which is not correct
- Nothing in the developer's attorneys' submittal states why hydrants cannot be extended

The Developer Offered:

During a site visit/meeting on 11/22/2019, Mr. Scott Bosgraff offered:

1. To install two 8” dry hydrants within 400 feet of the home at 6736 Saugatuck Beach Road
2. To install additional sets of dry hydrants every 400 feet down the seawall through the channel to Lake Michigan.
3. To provide verification from the Northshores engineer that the 10 feet wide “river-side water supply access lane” would support the weight of our apparatus.

What alternatives have been offered?

- None
- If the developer, or property owner were to suggest some alternative fire safety features such as fire sprinkler suppression systems, it would allow the fire code official to consider the increasing the 400 feet distance from the hydrant(s) to the proposed dwelling

Our Position

It is our position that we did not misinterpret the code, there has not been an equivalent method of protection proposed, and the provisions of the IFC do fully apply. Only by following the code, can our firefighters ensure we can provide a reasonable level of safety and property protection from the hazards of fire, explosion or dangerous conditions.

Fire District's Viable Solution

Taking all factors into account, the Saugatuck Township Fire District has concluded that the community of Northshores of Saugatuck, and its residents, are inadequately protected from fire danger. It is the recommendation of the Fire District that the community would be best served by installing a UL Listed Fire Pump, fire protection mains, and hydrants within 400 feet of every dwelling in the Northshores of Saugatuck development as proposed by the original developer, in submittals by Smith Group LLC from 12/10/2012



THANK YOU



We greatly appreciate all of the hours Board of Appeals members have committed to hearing our case, and protecting our citizens, and the Fire District's most valuable asset, our personnel.

References

1. International Fire Code – 2015 Edition
2. The Commercial Record Newspaper – 1/9/2020
3. National Fire Protection Association (NFPA) 1142 – 2012 Edition
4. National Fire Protection Association (NFPA) 1901 – 2016 Edition
5. Case 1:10-cv-00210-PLM Doc #199 Filed 06/11/12 Page 6 of 22 Page ID#2560
6. SmithGroupJJR, December 10, 2012 Letter, re: Phase 1 Singapore Dunes Development Fire Safety Requirements