CITY OF
TSHWANE
IGNITING EXCELLENCE

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EMERGENCY SERVICES DEPARTMENT


# Firefighting Water Supply: Fire Hydrants

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# PRESENTATION CONTENT

1. Overview of Fire hydrants
2. Applicable codes and legislation
3. Types of fire hydrants and outlets
4. Fire hydrant water reticulation
5. Fire hydrant maintenance in City of Tshwane
6. Insurers considerations

# Overview of Fire Hydrants

**Definition and Functionality**

Fire hydrants are critical fixtures in urban firefighting infrastructure, providing rapid access to water for extinguishing fires. They enable firefighters to quickly connect hoses and draw water from municipal supply systems, enhancing response efficiency and improving overall safety for communities.

**Types of Fire Hydrants**

Fire hydrants are crucial for firefighting, primarily classified into two types: wet barrel and dry barrel hydrants. Wet barrel hydrants have water readily available, ideal for warmer climates, while dry barrel hydrants prevent freezing in colder areas, making both essential for effective emergency response.

**Importance of Fire Hydrants in Urban Areas**

Fire hydrants are crucial for urban fire safety, enabling rapid access to water for firefighting. Their strategic placement reduces response times, minimizes property damage, and enhances community resilience against fires, ultimately protecting lives and assets in densely populated areas of South Africa.

# APPLICABLE CODES & LEGISLATION

## SANS 1128-1: Firefighting Equipment

- Type and material – Undergrouand
- Construction requirements
- Portable standpipes– Inlet & Outlet connections
- Performance requireeens
- Inspection and methods of test

## SANS 1128-2: Hose couplings, Connecto-rs and branch pipe & nezzla cannection

- Materials, design and construction
- Markings

## SANS 1475-2: Fire hose reels and above-ground hydrants

- General requirements
- Water supply & Fire Hydrants
- Maintenance intervals

## SANS 10400: Application of the National Building Regulations

- Part T: Fire Protection – 4.35 Hydrants– requirements and position

## SANS 10105-2: Use and control of firefighting equipment

- Fire hose reels and hydrants
- Provision of Fire Hydrants

## SANS 10090: Community protection against fire

- Fire risk categories
- Water supply & Fire hydrants
- Maintenance intervals

**Water Services Act (No. 108 of 1997)**

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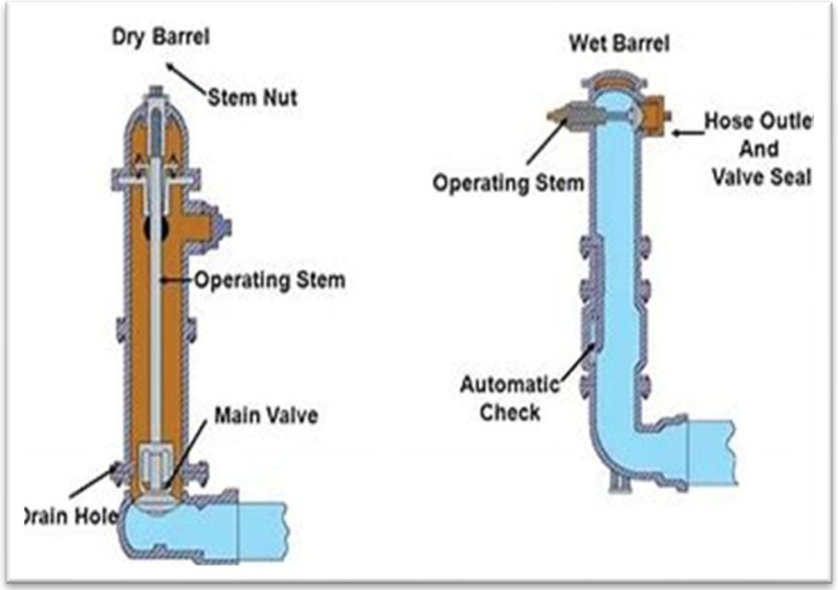
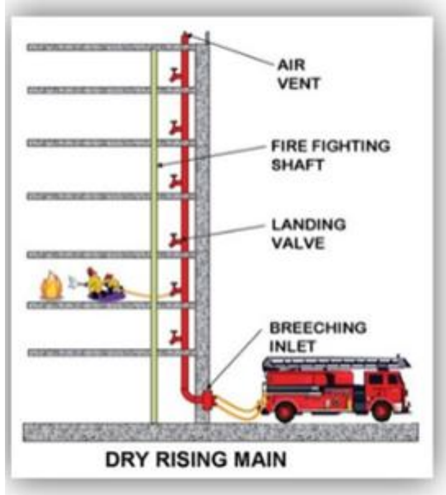
# Different Types of Fire Hydrants

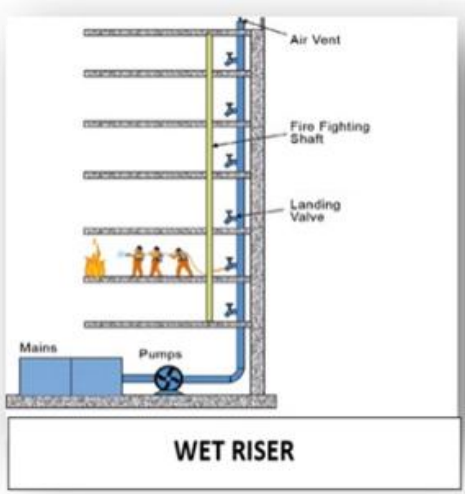
Above Ground Fire Hydrant




Outlets


Under Ground
Fire Hydrant




Internal Fire
Hydrants

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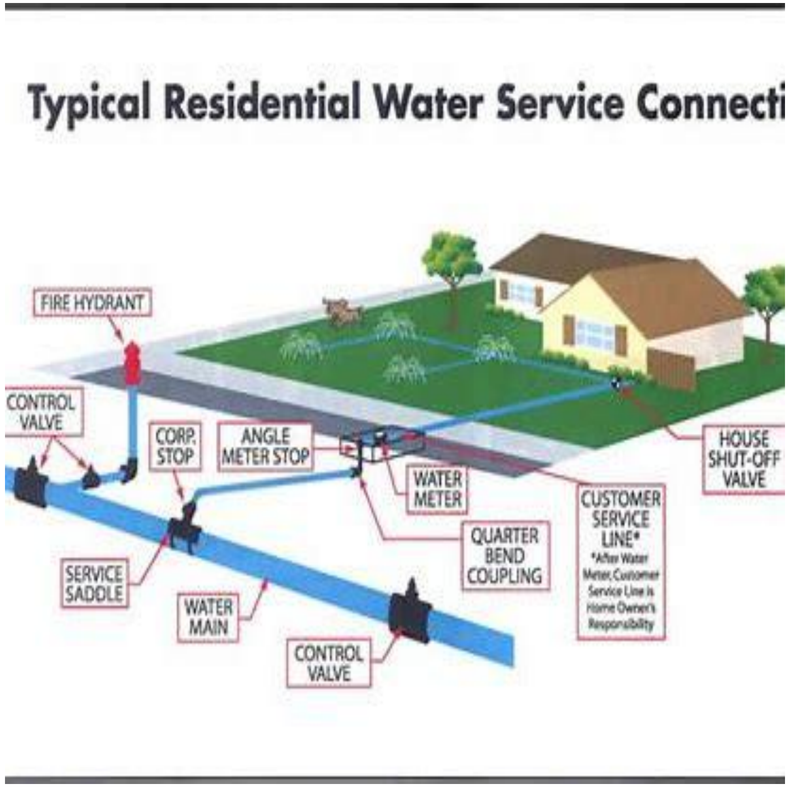
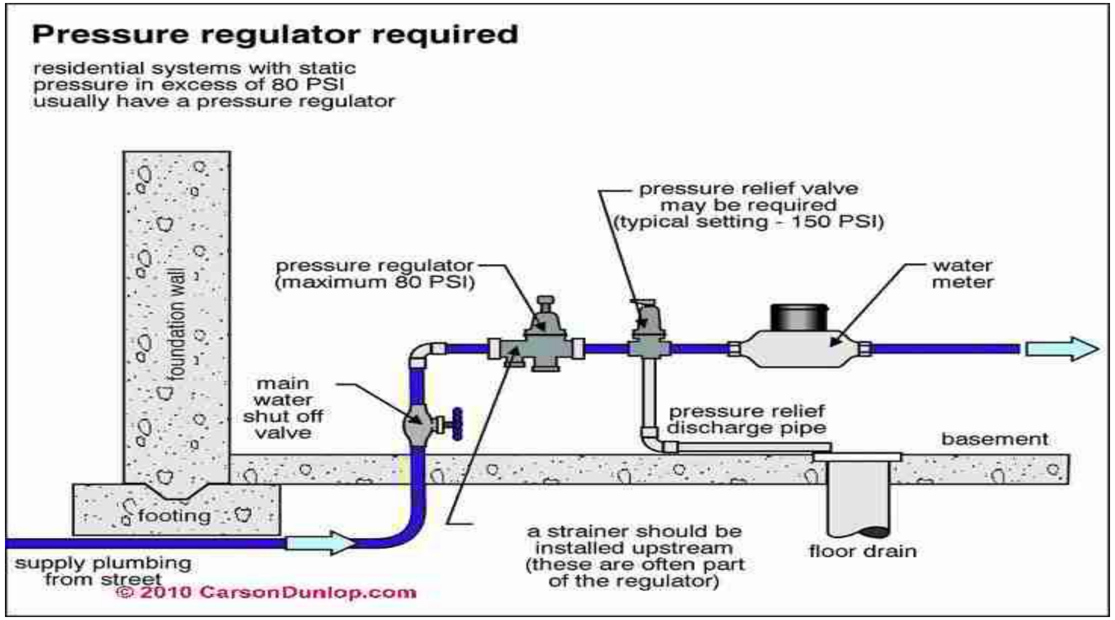
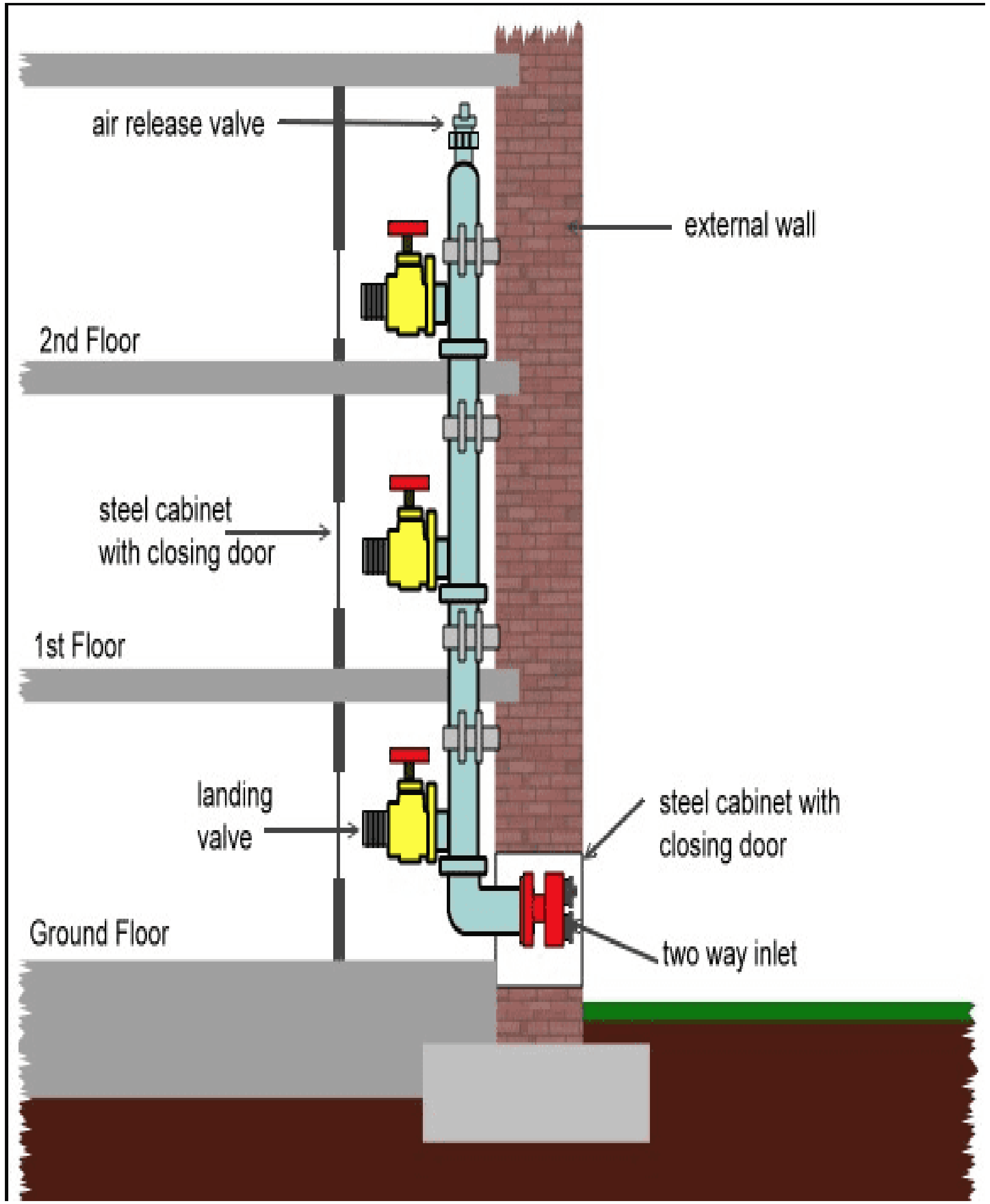
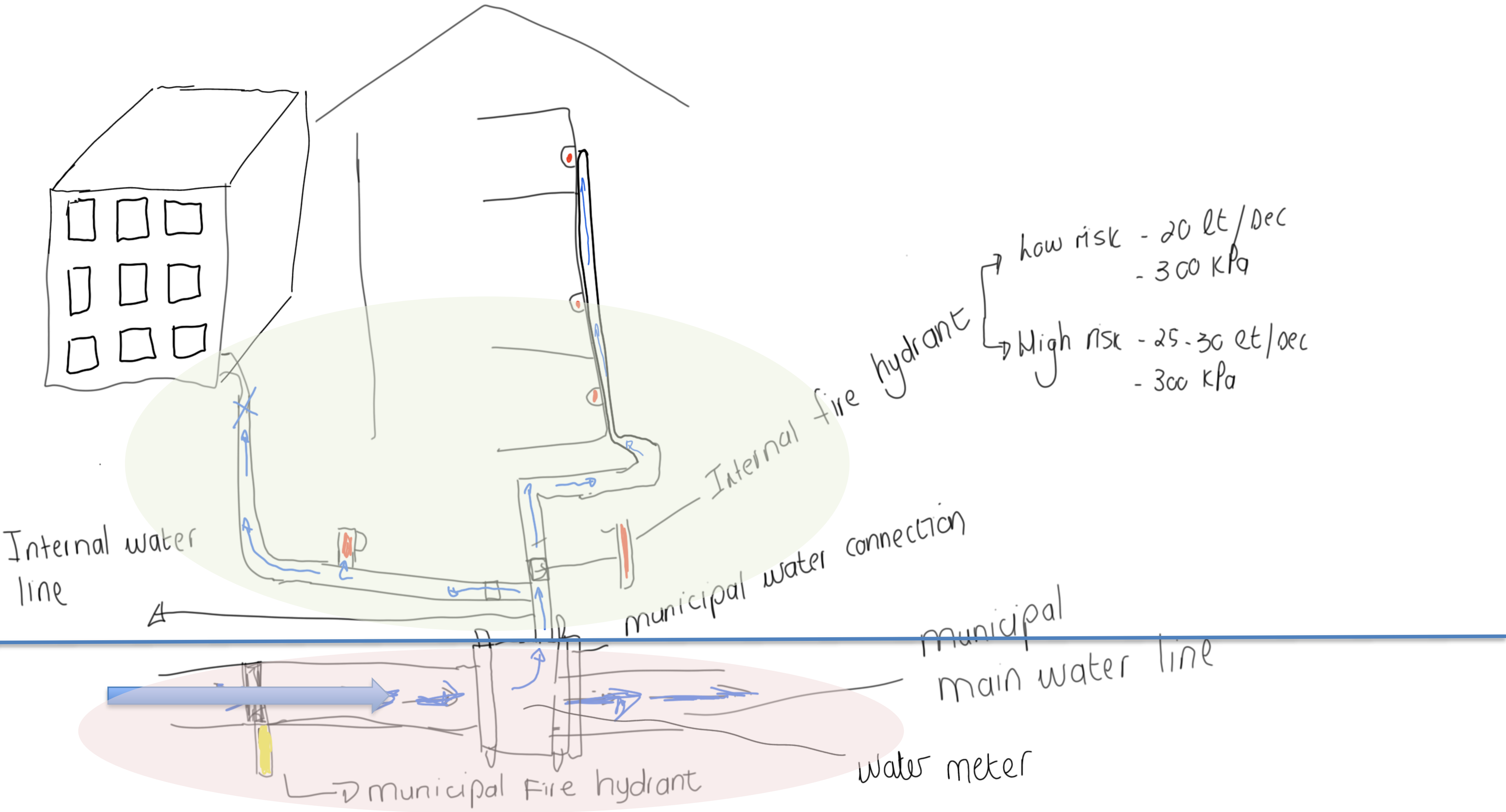
# Fire Hydrant Water Reticulation



# Fire Hydrant Water Reticulation



# Fire Hydrant Maintenance in the City of Tshwane

Maintenance (above ground)

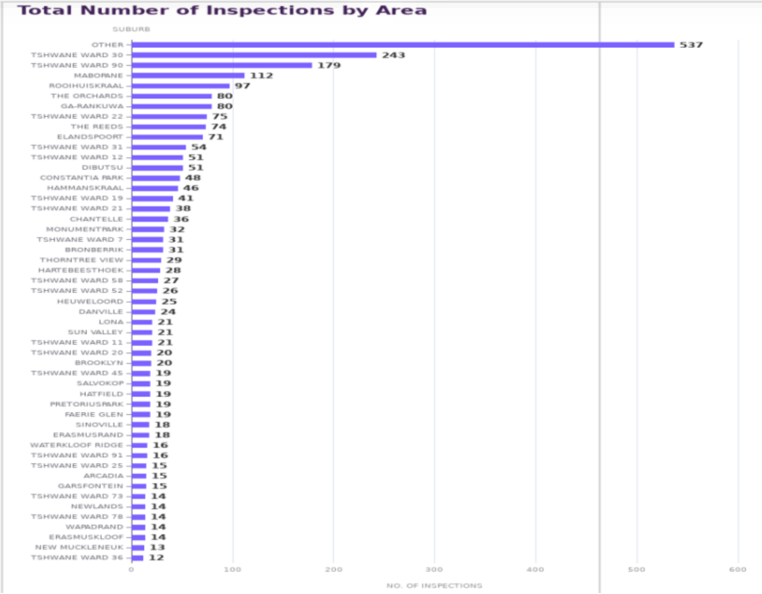
Access restrictions

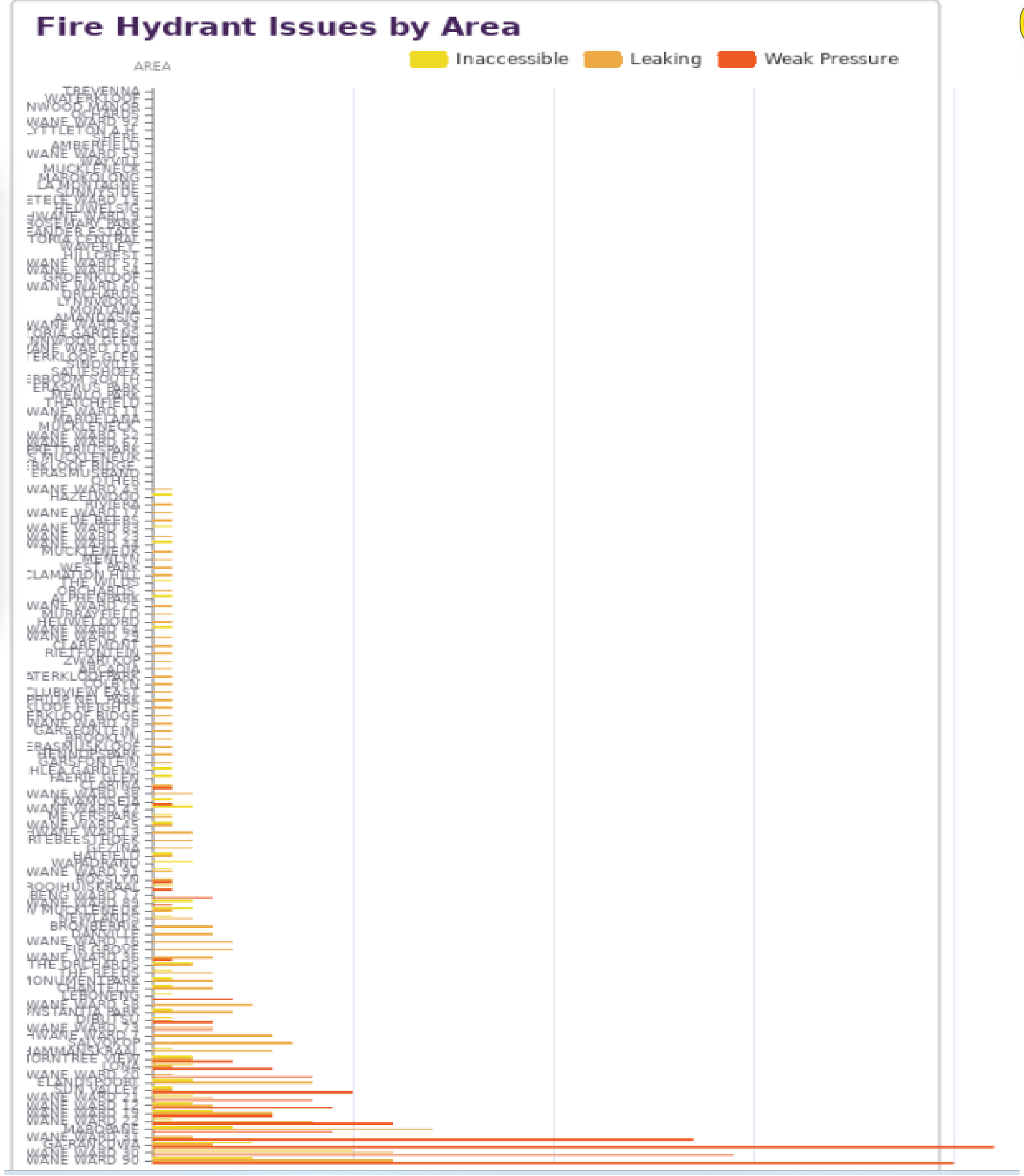
Visibility

Pressure and flow testing

Location mapping


LYNNRIDGE HOUSE


Total Number of Inspections by Area
SUBURB
OTHER 537
TSHWANE WARD 30 243
TSHWANE WARD 90 179
MABOPANE 112
ROOIHUISKRAAL 97
THE ORCHARDS 80
GA-RANKUWA 80
TSHWANE WARD 22 75
THE REEDS 74
ELANDSPOORT 71
TSHWANE WARD 31 54
TSHWANE WARD 12 51
DIBUTSU 51
CONSTANTIA PARK 48
HAMMANSKRAAL 46
TSHWANE WARD 19 41
TSHWANE WARD 21 38
CHANTELLE 36
MONUMENTPARK 32
TSHWANE WARD 7 31
BRONBERRIK 31
THORNTREE VIEW 29
HARTEBEESTHOEK 28
TSHWANE WARD 58 27
TSHWANE WARD 52 26
HEUWELOORD 25
DANVILLE 24
LONA 21
SUN VALLEY 21
TSHWANE WARD 11 21
TSHWANE WARD 20 20
BROOKLYN 20
TSHWANE WARD 45 19
SALVOKOP 19
HATFIELD 19
PRETORIUSPARK 19
FAERIE GLEN 19
SINOVILLE 18
ERASMUSRAND 18
WATERKLOOF RIDGE 16
TSHWANE WARD 91 16
TSHWANE WARD 25 15
ARCADIA 15
GARSFONTEIN 15
TSHWANE WARD 73 14
NEWLANDS 14
TSHWANE WARD 78 14
WAPADRAND 14
ERASMUSKLOOF 14
NEW MUCKLENEUK 13
TSHWANE WARD 36 12
0
100
200
300
400
500
600
NO. OF INSPECTIONS


Fire Hydrant Issues by Area
AREA
Inaccessible
Leaking
Weak Pressure

# Fire Hydrant Inspections

## FIRE HYDRANT INSPECTION CHECKLIST

Type: Wet Barrel    Size: 80 mm

Location: ____________    Inspector Name: ____________

### VISUAL AND STRUCTURAL INSPECTION

- ☐ Hydrant is visible and onbostructed (no overgrowth, debris, or parked vehicles)
- ☐ Correct color coding and clear markings (per local codes)
- ☐ Hydrant body free from rust, cracks, leaks, or damage
- ☐ Bonnet and barrel free from dents or corrosion
- ☐ Flange and bolts secure and not corroded
- ☐ Hydrant securely attached to base

### MECHANICAL COMPONENTS

- ☐ Operating nut turns smoothly (no excessive resistance or binding)
- ☐ Valve stem operates correctly
- ☐ Bonnet is tight and shows no leakage
- ☐ All caps present and in good condition
- ☐ Outlet threads undamaged and well-lubricated
- ☐ Chains attached to caps and not corroded
- ☐ Gaskets present and not cracked/deterioeated

### FUNCTIONAL TESTING (IF NEEDED)

- ☐ Cap removed slowly to check for backpressure
- ☐ Valve opens fully and water flows freely
- ☐ Check flow rate and pressure if required (use flow meter or pitot gauge)
- ☐ No leakage around stem or barrel during flow
- ☐ Close valve slowly – ensure smooth shutoff
- ☐ No water leaks after closing (wat barrel should retain water internally)

### NOTES/RECOMMENDATIONS

______________________________

______________________________

______________________________

## Static water pressure test procedures

**C.2** Fit a procedures in C.2 to C.9 inclusive are apllicable to above-ground hydrants only.

**C.3** Fit a 65 mm blank cap assembly. complete with a pressure gaugeand barl-cock, to the oulet

**C.4** Open the hydrant slowly.

**C.4** Crack open the blank cap assembly ball-cock and drain a small amount of water into a bucket to ensure that the water is flowing and that is no air in the blank cap assembly.

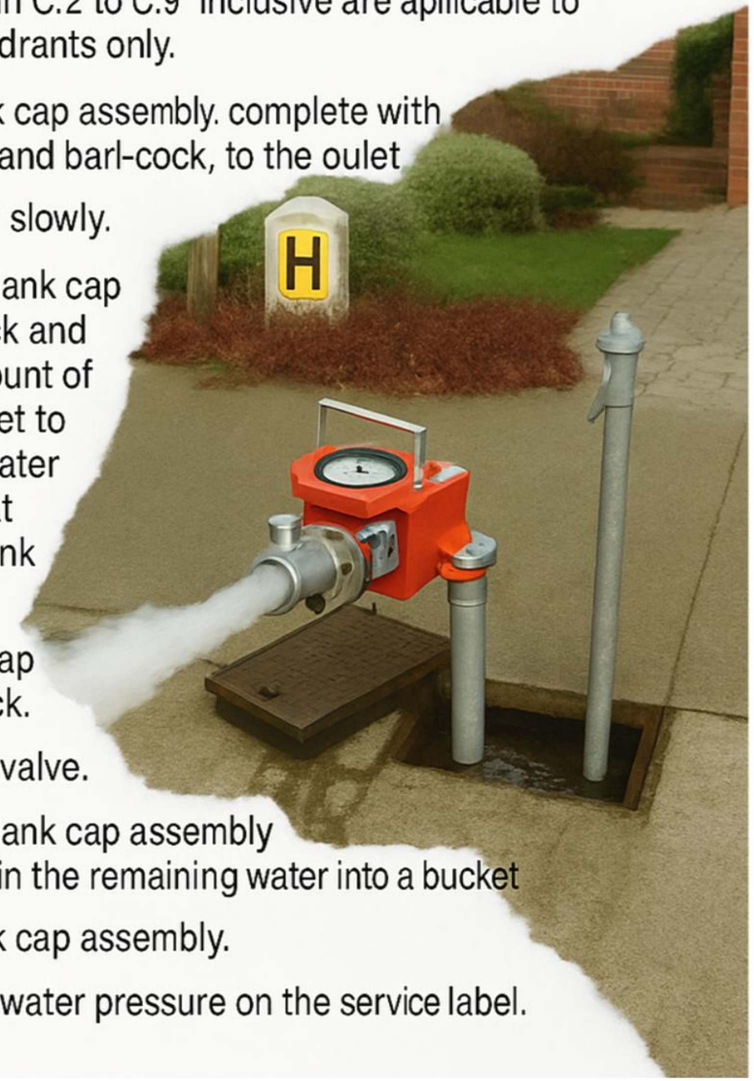
**C.5** Close the blank cap assembly ball-cock.

**C.6** Close he hydrant valve.

**C.7** Crack open the blank cap assembly ball-cock and drain the remaining water into a bucket

**C.8** Remove the blank cap assembly.

**C.9** Record the static water pressure on the service label.



# Key Challenges

## Illegal Connections

Unauthorized taps reduce water pressure. This impacts firefighting capability. Public awareness campaigns are crucial.

## Not Visible and Obstructed

Vegetation, debris, or vehicles obstruct hydrants. This delays emergency access. Regular clearing is essential.

## Below Ground Debris

Underground hydrants collect debris. This affects water flow and operation. Routine cleaning is necessary.

# Insurers Considerations

## Regular Inspections and Testing

Regular inspections and testing of fire hydrants ensure they are operational and meet safety standards. This proactive approach prevents malfunctions during emergencies, enhances public safety, and ultimately reduces insurance claims related to fire damage. Consistent maintenance is crucial for community resilience and effective emergency response.

## Common Repairs and Upgrades

Regular annual maintenance of fire hydrants is crucial to identify and perform common repairs, such as fixing leaks and replacing damaged valve components. Upgrades may include installing modern features that enhance functionality and reliability, ensuring effective response during emergencies.

## Ensure Visibility and Accessibility

Inadequate visibility and accessibility of fire hydrants can lead to delays in incident response and increased damage in emergencies. Insurance policies could account for hydrant visibility to enhance safety, minimize claims, and ensure quicker access for emergency services during critical situations.

## Collaboration with local fire department

Collaborating with local fire departments enhances annual maintenance by ensuring that fire hydrants are regularly tested, repaired, and maintained. This partnership facilitates timely inspections and promotes comprehensive training, ultimately improving response times and the overall efficacy of fire services.

# FIRE HYDRANTS ARE A CRITICAL, YET OFTEN UNDERESTIMATED, PILLAR OF FIRE PROTECTION

When they’re properly installed, maintained, and integrated into reliable water systems, they dramatically reduce fire losses—the very outcomes insurers strive to prevent. Every functioning hydrant is not just a public safety asset, but a powerful risk-reduction tool.

For insurers, investing attention into hydrant reliability isn’t just good practice—it’s smart

**We Prevent– We Prepare – We Respond – We Make Life Safer**

# THANK YOU