Japanese Knotweed Management Plan – Capri Whitechurch Road Dublin

Ronnie Murphy – Knotweed Surveyor

Knotweed Control Ireland 25/04/2020

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Version	Checked by	Written by
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1- INTRODUCTION TO THE SITE

On the 10th of August 2018, a site assessment/survey searching directly for evidence of Japanese knotweed was undertaken at the Whitechurch Road property. Japanese Knotweed was recorded growing as you enter the property to the right. The Knotweed was growing out of a spoil heap and along the boundary wall to the river. An assessment of Best Practice eradication methods was carried out and after a discussion with the developer we determined that due to limited space on site in addition to the project time-scale that the most practical removal option most suited to the site was the Dig & Dump method.

The Dig & Dump method consists of excavating the bulk of the viable underground rhizome/root system including all above Knotweed plant material. This material is then disposed off-site to a licensed landfill facility. There are soil sample results and special licensing to complete before any Knotweed impacted soil material can be taken off-site.

This management plan was commissioned by Ger O'Connor, and an Invasive Plant Survey (Japanese Knotweed) was carried out by Knotweed Surveyor Ronnie Murphy of Knotweed Control Ireland. The purpose of the survey was to assess the likely presence of the highly invasive knotweed plant species which would constitute potential constraints to any construction work or ground disturbance which might take place near the immediate area of the infestation.

This Management Plan outlines the course of action that needs to be taken to eradicate this invasive weed in preparation for the new development at the above property. Knotweed Control Ireland have the expertise in the eradication of this weed and have the necessary experience and qualifications to apply herbicides and in addition carry out all associated works relating to the tried & tested Best Practice methods of eradication/control as seen in the Knotweed Code of Practice, 2013. Knotweed Control Ireland will remain in compliance by the guidance contained within this management plan. This Management Plan should be read in conjunction with the Environment Agency Knotweed Code of Practice, 2013, including the Property Care Association, Managing Japanese Knotweed, 2018.

Please Note: The herbicide application method of eradication/control for Japanese Knotweed is a long-term method needing 3-5 years to be fully effective. This method is not viable for sites undergoing construction works that will disturb the ground were the Knotweed is growing. KCoP – 2013.

Scope of Work: (Whitechurch Road)

The eradication of Japanese Knotweed at Whitechurch Road is by Dig & Dump Method. All Knotweed impacted soils and material will be excavated and disposed off-site under license from National Parks & Wildlife Services.

1.3 Limitations and Threats to Site Management Objectives

The presence of Japanese knotweed on the Whitechurch Road site and the up-coming construction works allow the potential for Knotweed material to be spread on/off site. Following Best Practice guidelines and related legislation it is vital to employ the services of an experienced professional invasive Plant specialist. Biosecurity safe-guards will be put in place and all personnel on site should practice good site hygiene to avoid spreading this highly invasive plant further on or off site. It is important that the Invasive Plant Contractor remain in regular contact with the site manager, architect, and QS to ensure good communication lines are active through-out the eradication program.

Important:

- Any soil movement on site, leaving site or entering site should follow guidance within BS: 3882 – 2007/15 Specific to invasive plant material.

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- Any ground disturbance to the immediate area around any part of the Knotweed infestation should first be planned in advance with Knotweed Control Ireland (KCI).
- Bio-security protocols related to Invasive plants like J. Knotweed species should be strictly followed. *(See section 3.7 below* **Biosecurity Safeguards & Controls)**

1.1 Description of the Site

This is a small site (1,115 m/2) that currently consists of a derelict house and garden, with the Whitechurch Stream running along the eastern boundary, parallel to the Whitechurch road.

Site Location

The property is off the Whitechurch Road, Rathfarnham. Dublin.

Grid Reference for Knotweed: O 14276 27963

Brief description of the proposed development:

An Bord Pleanala Ref. PL06S.235823 for construction of 4 no. 2 storey semi-detached houses with 8 parking spaces with new bridge to Whitechurch Road & associated landscaping & drainage works.

Modifications include increased overall height by 775mm to create a second storey with 2 no. Velux windows to front roof. increased width of dwellings by 500mm & modification to front elevation.

Brief description of the site post-development

The new property will be welcomed by the local community transforming a derelict site into a riverside built environment.

1.2 Site Management Objectives

The new build is expected to be completed in approx. 12 months subsequent to planning permission.

All efforts should be carried out to ensure no invasive plants are re-planted back onto the property. Native tree and plant species should be given high priority in the landscape design. Plants that are known to shade out neighbouring vegetation and hold high degrees of allelopathy should be given consideration in the new planting design and planted in the immediate area were Knotweed was previously located.

During the landscape design process, the landscape architect should work with the invasive plant specialist to plan a course of action to consider the monitoring and treatment of any J. Knotweed regrowth that may appear on site.

***Note**: It is important that any landscaper or garden designer build in plant design and garden maintenance that is built around the potential of knotweed regrowth returning.*

***For example**: Planting non-expensive plants in the Knotweed treatment area with a view to replanting desired planting after the two-year monitoring has finished.*

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1.3 Inventory of the Site

At the above property Knotweed was confirmed to be growing to the right of the site entrance. The Knotweed was growing out of a small soil heap and may have spread onto the site by fly-tipping. There were no other instances of Knotweed recorded on-site.

KCI surveyed these properties by way of visual inspection and close examination of the Knotweed plants within the perimeter boundary. It is also KCI standard practice to survey a buffer zone outside and around each property. It was not possible to survey all boundaries at the time of the survey due to limited access to neighbouring gardens.

Size of Above Ground Infestation: Approx. 8m x 1m

Average Height of Plants: 2m.

Approx. weight/volume of Knotweed impacted soil going for disposal: ~6-8 m/3.

Landfill Facility: IMS. Based in Hollywood, Nags Head, Naul, Co. Dublin.

Haulier: Shannowen Plant Hire

Invasive Plant Specialist: Knotweed Control Ireland

2 - OVERVIEW OF MANAGEMENT PLAN

2.1 Brief Description of Management Plan

The Management of Japanese knotweed on site shall be overseen by Knotweed Control Ireland. This Management Plan and appendices and revisions of this plan shall be kept for future property owners. This Management Plan should be read in conjunction with the Environment Agency Knotweed Code of Practice, Managing Knotweed on Developing Site's, 2013 and the more current Knotweed Code of Practice published by the Property Care Association, 2018.

2.2 Setting Priorities

- Areas of Japanese knotweed on site which require rapid treatment are identified. (All Knotweed on-site)
- Prevention of further spread/infestation of the plant on the site is a priority. (Follow strict Bio-security Guidelines)
- Implementation will be based on the above information.
- Regular monitoring to be carried out
- Management will be revised in response to feedback from the above.

High Priority

• All Knotweed on site should be treated following Best Practice Guidelines while also following guidance on the Herbicides label. Including implementing IPM principles such as minimising Herbicide use.

• all imported material should be managed in line with guidance from BS: 3882- 2007/15

•All imported material should be monitored for invasive plant material.

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If there is plans to build a new structure it is advised to cover the footprint of any hard standing or new build that will be built within the immediate (4-7m radius) of the Knotweed infestation with a special Root Barrier (DENDRO SCOTT).

• ***Monitoring**: A scheme for monitoring will be agreed with the property owner and the Knotweed Specialist Contractor who will be overseeing the eradication/control of Japanese knotweed on site*

Medium Priority

Knotweed on adjacent properties were possible may be treated in-situ with herbicide.

Low Priority

• Replacement vegetation. If possible, any excavation areas can be left open once secured. this allows residual rhizome to be killed off from exposure. If the area has been cleared of Knotweed and re-planting is needed, then hardy native shrubs should be selected.

2.3 Preventing Further Spread

Description of methods to be employed to prevent further spread:

- Isolation of Japanese knotweed on site by fencing to avoid disturbance during treatment.
- Signage may be installed to alert personnel on-site of the impacts if Knotweed is disturbed.
- Procedures to ensure that imported materials (Soil, Sand & hardcore) are free from Japanese knotweed. All imported inert materials should comply with BS: 3228 – 2007/15.

All areas affected by Japanese knotweed to be fenced and isolated from activities on site immediately to avoid potential for spread on-site. An area including a perimeter of at least 5-7m from the above ground stems should be isolated. See Environment Agency Code of Practice 2.1, 2.2

All topsoil and materials brought onto site to be checked prior to accepting. See Environment Agency Code of Practice 2.3 No new materials to be stored adjacent to Japanese knotweed isolated areas.

No movement of Japanese knotweed contaminated material across site unless by direction of invasive plant specialist (KCI), avoiding areas that are free from Japanese Knotweed.

A toolbox talk should be given by the site manager/invasive plant specialist to all operatives and contractors working on site highlighting the impacts of Japanese Knotweed and how it can damage hard standings and new builds.

Posters highlighting the key features of the plant should be displayed in all communal areas *(see Environment Agency Code of Practice Appendices I-IV).*

3. SPECIFIC CONTROL PLANS FOR JAPANESE KNOTWEED

3.1 Management objectives (measurable)

Objective 1

• *Immediately contain existing Japanese knotweed on site and prevent further spread.*

Objective 2

• *Reduce the percentage cover of Japanese knotweed on site by 98-100 % within the first year.*

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Objective 3

- *Eliminate Japanese knotweed on site within 3-5 years using tried and tested Dig & Dump method.*

Please note: *The Knotweed Code of practice was discontinued in 2017, however this document is still referred to and referenced as most of the content within is current and relevant.* [i]

3.2 Management options

A variety of the above Best Practice eradication/remediation options were assessed.
Herbicide treatments alone are typically not used on construction/development sites. This is because herbicide treatments require follow up repeat applications for up to 3-5 years to be fully effective. Given on most development sites space is limited and typically the knotweed would be located in a construction critical area. For these reasons it is recommended to opt for a Dig & Dump method of eradication on development sites.

Please note: Following Best Practice, in all situations, at least 2 consecutive years of no Knotweed regrowth is required before the site can be deemed clear of Knotweed and stamped fully remediated.

Option 1 – Herbicide spraying/Injection

Treatment with herbicide application is seasonally dependant and takes time (between 3-5 seasons) to be effective.

Note: This does not fit with the project programme as currently advised.

As with all eradication/control methods a monitoring programme should be maintained to check and treat any re-growth of Japanese knotweed.

Please note: Following Best Practice Knotweed plants should be treated with herbicide from 2-4 weeks prior to excavations taking place.

Option 2 – Stockpiling and herbicide spraying (Bund Method)

The Japanese knotweed infestation may be excavated whilst supervised by a specialist (as in options 3 and 4). The infested material may then be stockpiled on site subject to a controlled spray application of a translocated herbicide., care must be taken when spraying the stockpiled material to avoid drift to any surrounding vegetation / ground. In order to prevent spread, the contaminated material must be stockpiled on a layer of root barrier membrane and enclosed within a clearly signed and fenced compound in an undisturbed area of the Site. Stockpiling of contaminated material may be undertaken in winter and subsequently sprayed with herbicide during spring / summer, when in leaf.

Note: Due to limited space on the Whitechurch Road property the Bund method would not be suitable.

Option 3 – Controlled excavation with on-site burial

As in option 2, each identified stand of Japanese knotweed will be excavated under the supervision of a specialist invasive species contractor, whereby all viable knotweed material (crown, stem, rhizome) and contaminated soil will be removed.

All contaminated material must be either buried to a depth of at least 5m and covered with both inert material and a root barrier membrane layer or buried to a depth of 3 m with all contaminated material encapsulated in a root barrier (Dendro Scott) membrane cell and covered with inert material. It is recommended that the Japanese knotweed infestation be treated with Glyphosate at least once before excavation and burial in order to reduce plant vigour. This method of excavation of knotweed may be undertaken in winter.

Burial on site can be a cost effective and sustainable option as long as works are carried out in compliance with Best Practice Guidelines.

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As with all eradication methods a monitoring programme should be maintained to check any re-growth of Japanese knotweed.

Note: Burial on-site would not be a viable option for the above property due to limited space on site and the proximity of the river running along the side boundary.

Option 4 – Controlled excavation with off-site disposal (Dig & Dump)

Each identified stand of Japanese knotweed will be excavated under the supervision of a specialist invasive species contractor, whereby all viable knotweed material (crown, stem, rhizome) and contaminated soil will be removed from the site and disposed of at a previously identified licensed landfill facility. A controlled excavation aims to reduce the volume of contaminated material required to be disposed of by only excavating the extent of rhizomes present. The volume of contaminated arising can be further limited by a process of rigorous sifting and sorting.

All contaminated soil and knotweed material will be disposed of appropriately and all machinery used for the removal of the potentially contaminated soil will be thoroughly cleaned in a designated root barrier membrane lined bio-secure area. All personnel working in the area potentially contaminated with invasive species shall clean their boots and shoes to ensure that no regenerative plant materials are transported around/from the site. Signs notifying personnel of the importance of good site hygiene and bio-security will be erected.

There is no seasonal constraint with this option, albeit the elapsed time for the controlled excavation operation represents an addition to the front end of the construction programme. Once complete, no further limitation is placed on the use of the site during the construction and operation stages. The volume of material taken to landfill, however, makes it less effective in financial and sustainability terms.

A monitoring programme should be maintained to check any re-growth of Japanese knotweed.

Please Note: Although Option 4 is the most expensive and following Best Practice should only be considered as a last resort. However, due to development works being carried out and limited space on the property. Therefore, we recommend the Dig & Dump method, as the most practical and suitable eradication option given the limited space and time-scale of the project.

3.3 Actions planned (treatments and monitoring) -

Follow up monitoring site surveys to be carried out at 20 Ferncourt between May- September of each growing season. If any Knotweed regrowth recorded, they should be left un-disturbed and to grow to maximum leaf area before application of herbicide.

3.4 How actions will be evaluated (criteria for success)

Once control action has been completed successfully, as determined by the criteria outlined in this management plan. Knotweed Control Ireland will issue a final report that includes:

- An outline of all control action that was carried out

- A completion certificate that confirms that the treatment is complete and that the Japanese knotweed at the property has been remediated.

In all situations it will be necessary to observe a minimum of 2-3 years without regrowth before it is possible to consider that the eradication process has been affective or that the site is clear of Japanese Knotweed. (PCA, 2014)

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3.5 Results of evaluation

This section is to be filled in later, preferably within 1 year, when monitoring data has been taken and evaluated. The evaluation should be used to determine whether any of the sections 3.1-3.5 above should be modified. **Note:** Knotweed Control Ireland will monitor the Ferncourt View site for at least 2 years on till no Knotweed regrowth has returned.

3.6 Resource needs

Given the Dig & Dump method is the option most suitable for Whitechurch Road - The eradication program will be in 3 stages

1. **Herbicide Application** (To be carried out on all Knotweed plants on-site between 2-4 weeks before excavations commence)
2. **Excavation of Knotweed impacted soils to be disposed off-site under license from NPWS.**
3. **Monitoring of Site/Treatment Area** (Carried out between May – September on till at least 2 consecutive years have passed with no Knotweed regrowth being recorded on-site.

Note: Herbicide application will combine foliar and injection methods.

Herbicide to be used: Translocated herbicide glyphosate 360.

Note:. All Knotweed impacted soils to the rear of Whitechurch Road will be excavated and stockpiled in ton bags. These bags can be stored on ground protection for added protection by catching any potential soil spills from the bags.

3.7 Bio-Security Safe-guards/Controls implemented on/off site

Why is Bio-security Important

It is vitally important to protect the natural environment, avoiding the destruction of habitats and pollution of the air, land and water. Providing a positive experience in our local communities helps improve the overall image of the construction industry and demonstrates that you care about the local environment.

Ensuring the eradication program works are compliant with all current practices surrounding invasive plant bio-security will take priority and is indeed central to all work carried out by Knotweed Control Ireland.

The following are some of the Bio-security practices we implement on all sites.

Carry out desk study on site history to determine greenfield/brownfield status.

Follow guidance in current relevant standards, Best practice & EU directives- for example

Waste Framework Directive, Water Framework Directive, National Biodiversity Action Plan, & Invasive Plant Best Practice.

Site Safe-guards/controls

Knotweed Control Ireland will use ground membranes at key locations on site. These membranes are ideally located at points of excavations, transferring soil from one machine to another, under stockpiles/bunds and when loading vehicles for disposal off-site.

Membranes and ground sheets when placed under machines can help contain soil spills. All soil spills on ground membranes should be carefully lifted and re-deposited back with contaminated material.

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It is good practice to keep machine tracks/wheels off contaminated soils, drivers should be directed to use the boom length to help keep tracks/wheels back from excavations and stockpiles. This is not always possible and machine inspections/cleaning should be carried out before each machine leaving the invasive plant work area.

It is good practice to direct machine drivers to avoid loading buckets, dumpers and loading trucks to close to the rims. Leaving room (approx. 20cm) from the top/rim is good practice to avoid spilling contaminated soils.

When using machine plant on-site for invasive plant eradication/control works do not let these machines be used elsewhere on site on till fully cleaned and inspected by an invasive plant specialist. Ideally these machines should be used exclusively for the invasive plants works on till the eradication work have finished on site.

When working with machines it is also important to have a supervisor present at all times to watch for bio-security infringements such as soil spills, outside machines/personnel entering/leaving work area while not under-going cleaning.

Note on Heavy Machine Plant Cleaning

Knotweed Control Ireland do not use power washing to clean heavy plant machine, we have found that powerful jets of water can carry or throw invasive plant rhizome/roots for several meters away out of the bio-secure zone. If the cleaning is carried out in summertime this is providing the invasive plant rhizome will good growing conditions to re-grow.

Furthermore, when power washing it is difficult to contain the access water, this has huge potential to enter drain systems both on site and close by. This may also contravene trade effluent regulations (Section 16-Water Pollution) Act 1977)

Careful visual inspections of machine tracks and wheels carried out in combination with a stiff brushing down of the machine has been found to be less of a risk in causing further spread. Truck tailgates can be temporary sealed with silicone to avoid soil spills during haulage.

Careful planning of clean and contaminated areas on site is also good practice when working with invasive plants. These areas can then be separated by temporary barrier tapes and gates.

Personnel and vehicles should be cleaned at specific areas of each site. Knotweed Control Ireland are at present working on developing a bio-gate this can be used by personnel when leaving contaminated areas. Each Bio-gate will have foot cleaning stations.

4. REFERENCE'S

EA - Knotweed Code of Practice. Managing Japanese Knotweed on Development Sites, V-3, 2013

http://www.property-care.org/wp-content/uploads/2014/12/Code-of-Practice-for-the-Management-of-Japanese-knotweed.pdf

http://www.sepa.org.uk/media/154142/onsite_mangaement_of_-japanese_knotweed_associated_soils.pdf

https://www.gov.uk/government/publications/treatment-and-disposal-of-invasive-non-native-plants-rps-178/treatment-and-disposal-of-invasive-non-native-plants-rps-178

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Appendix 1. Photo Record

This section will be updated with photos of the proposed eradication program.

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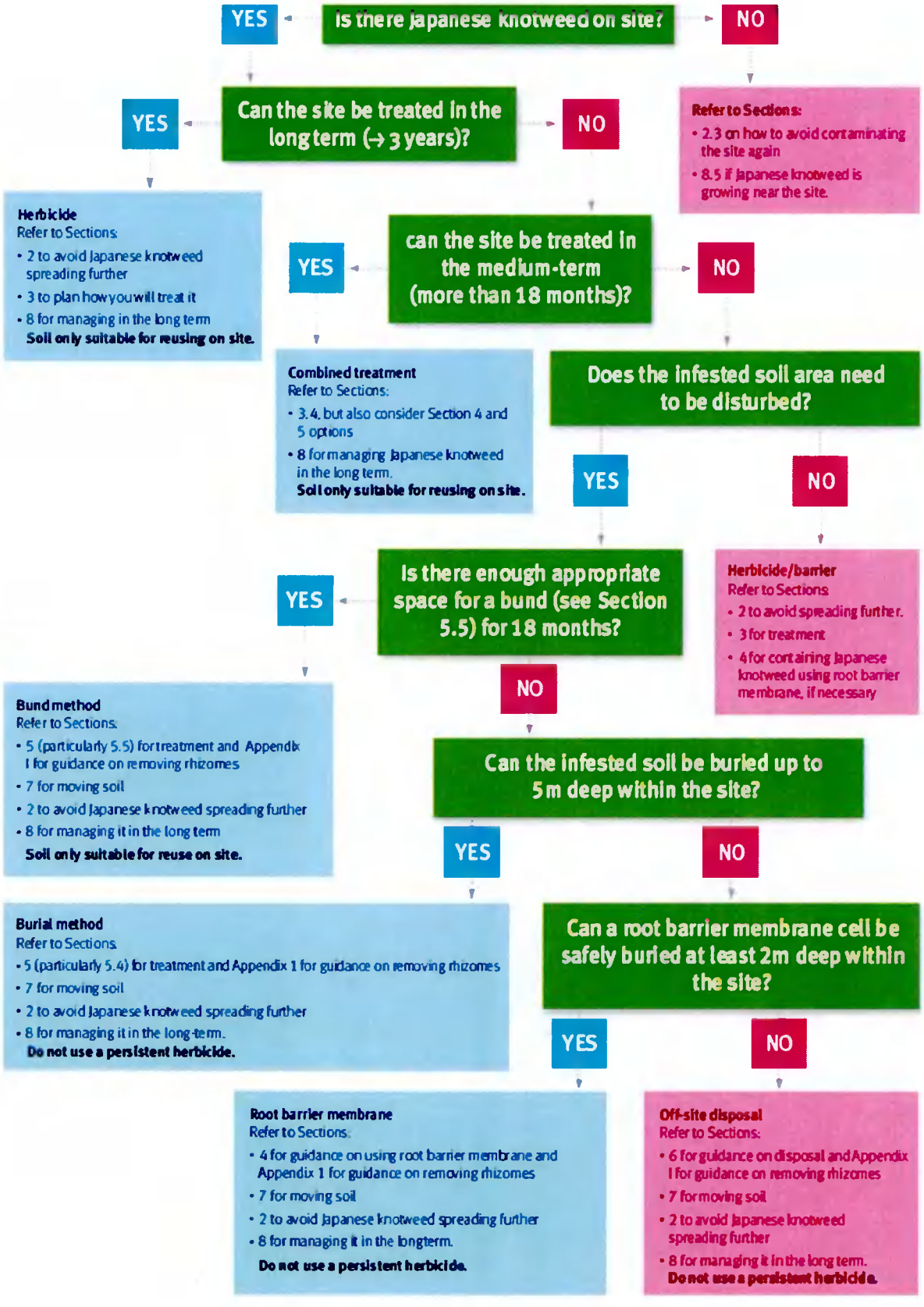
Knotweed flow chart used to assess best eradication/control method most suited to specific site.



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Map Showing approx. Knotweed locations at Whitechurch Road