





OSNGR: 554232, 279500

Area: 11.4 ha

BROWNFIELD

Proposed Development Details:

Flood Zone Coverage

FZ3b : <1%

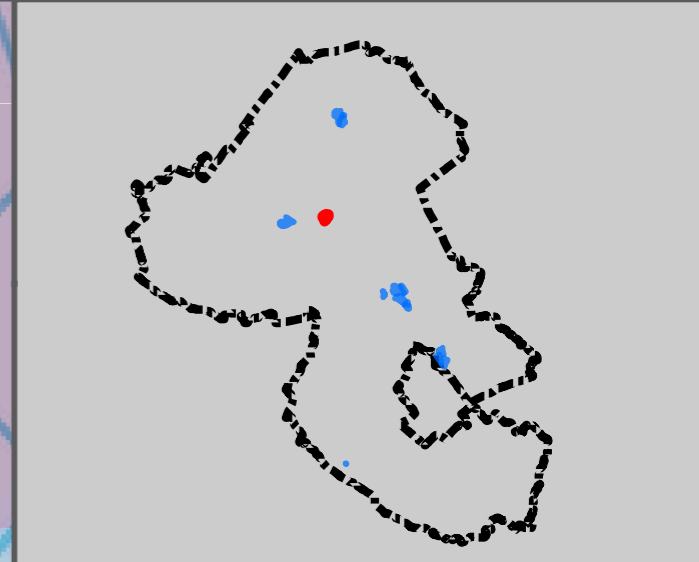
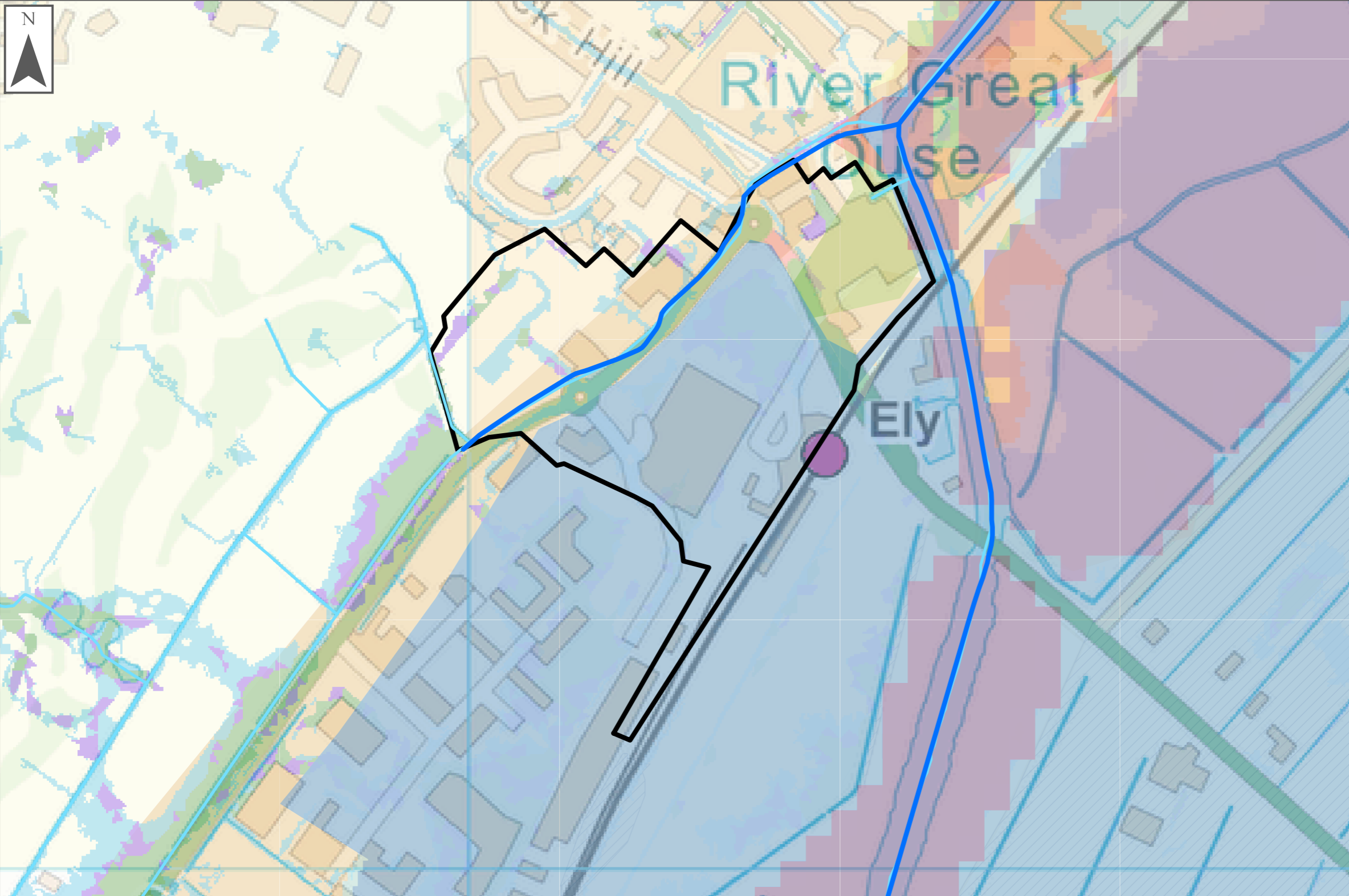
FZ3a: 50%

FZ2: 50%

FZ1: 50%

Mixed Use

STRATEGIC FLOOD RISK ASSESSMENT



**LEGEND**

**Flood Risk**

**Flood Zones**

- Flood Zone 3b
- Flood Zone 3a
- Flood Zone 2

**Climate Change**

- Climate Change Central
- Climate Change Higher Central
- Climate Change Upper

**Surface Water**

- uFMfSW 30-year Extent
- uFMfSW 100-year Extent
- uFMfSW 1,000-year Extent

**Area Susceptible to Groundwater Flooding**

- < 25%
- >= 25% <50%
- >= 50% <75%
- >= 75%

**100 year event**

**Depth (m)**

- 0 - 0.10
- 0.10 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 2.50
- 2.50 - 3.00
- 3.00 - 3.50
- 3.50 - 4.00
- >4.00

**Velocity (m/s)**

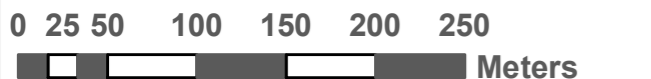
- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

**Hazard Rating**

- Very low hazard - caution
- Danger for some
- Danger for most
- Danger for all

**Source Protection Zones**

- Zone 1
- Zone 2
- Zone 3



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**LEGEND**

**Authority Information**

- Council Boundary
- Potential Site Allocations
- Main River
- Detailed River Network

**Defences**

- Embankment
- Wall
- Area benefiting from defence

**Flood Warning and Flood Alert Areas**

- Flood Warning
- Flood Alert

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OSNGR: 563150, 268263

Area: 14.6 ha

Mixed

Proposed Development Details:

**Flood Zone Coverage**

**FZ3b** : <1%

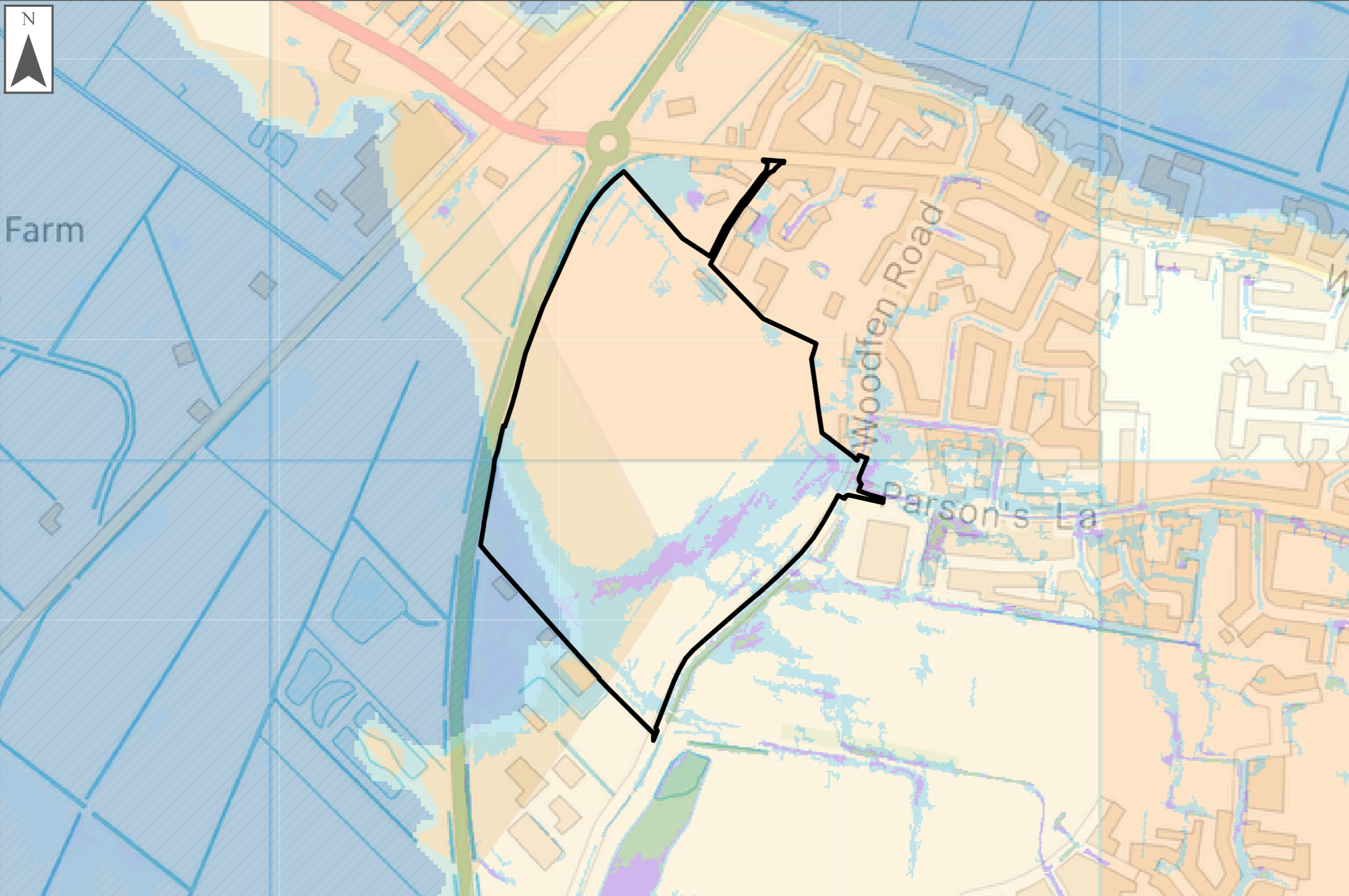
**FZ3a**: <1%

**FZ2**: 1%

**FZ1**: 99%

Mixed Green Field and Brown Field Site

**STRATEGIC FLOOD RISK ASSESSMENT**



**LEGEND**

**Flood Risk**

**Flood Zones**

- Flood Zone 3b
- Flood Zone 3a
- Flood Zone 2

**Climate Change**

- Climate Change Central
- Climate Change Higher Central
- Climate Change Upper

**Surface Water**

- uFMfSW 30-year Extent
- uFMfSW 100-year Extent
- uFMfSW 1,000-year Extent

**Area Susceptible to Groundwater Flooding**

- < 25%
- >= 25% <50%
- >= 50% <75%
- >= 75%

**100 year event**

**Depth (m)**

- 0 - 0.10
- 0.10 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 2.50
- 2.50 - 3.00
- 3.00 - 3.50
- 3.50 - 4.00
- >4.00

**Velocity (m/s)**

- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

**Hazard Rating**

- Very low hazard - caution
- Danger for some
- Danger for most
- Danger for all

**Source Protection Zones**

- Zone 1
- Zone 2
- Zone 3

0 2550 100 150 200 250 300 Meters

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**LEGEND**

**Authority Information**

- Council Boundary
- Potential Site Allocations
- Main River
- Detailed River Network

**Defences**

- Embankment
- Wall
- Area benefiting from defence

**Flood Warning and Flood Alert Areas**

- Flood Warning Area
- Flood Alert

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OSNGR: 563316, 268781

Area: 12.4 ha

MIXED

Proposed Development Details:

**Flood Zone Coverage**

**FZ3b : 30%**

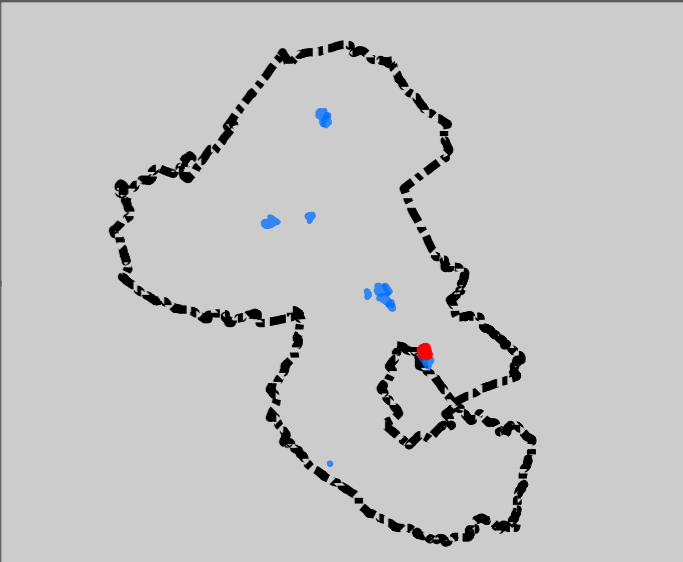
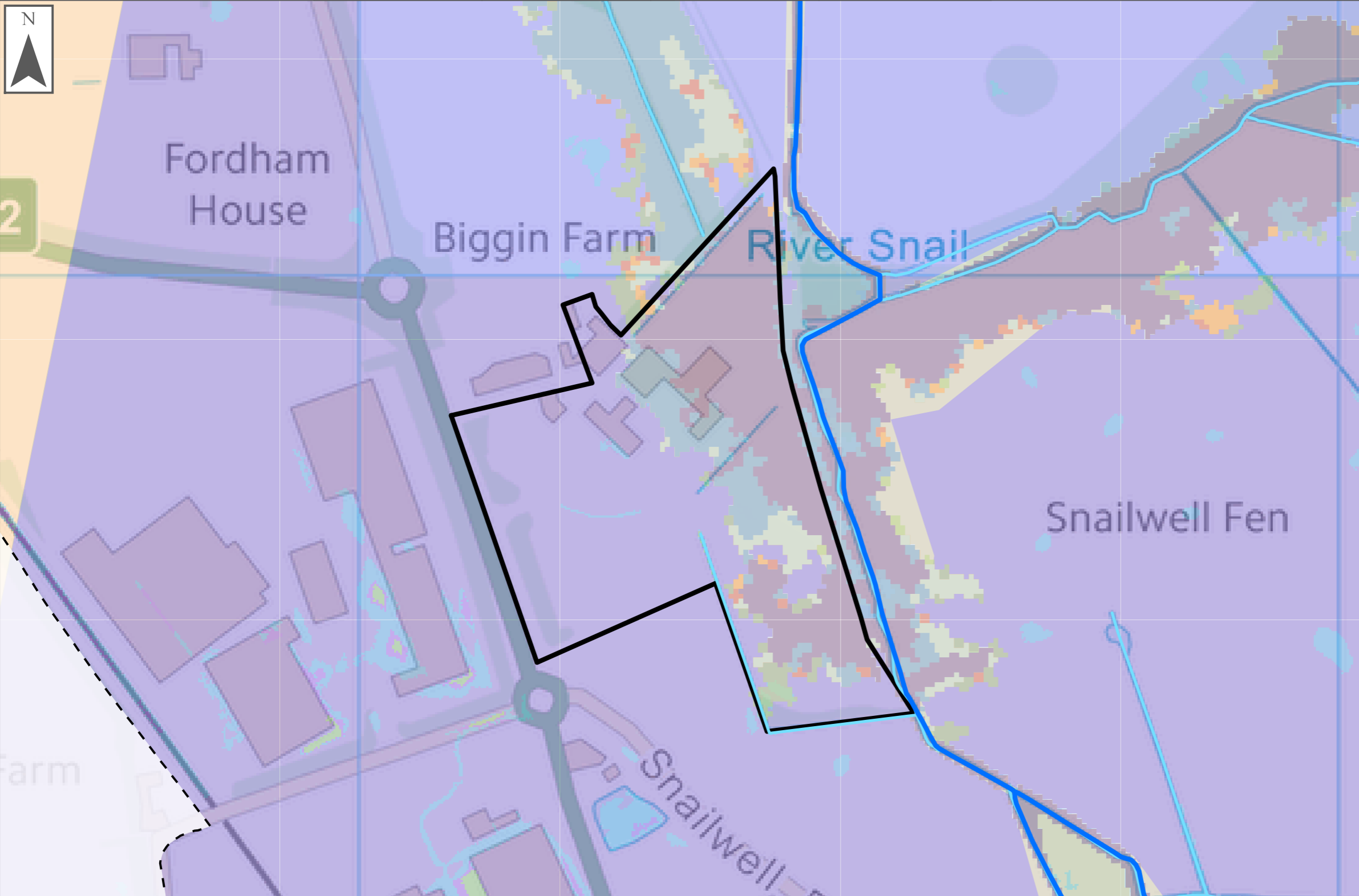
**FZ3a: 39%**

**FZ2: 42%**

**FZ1: 58%**

Mixed Green Field and Brown Fields

STRATEGIC FLOOD RISK ASSESSMENT



**LEGEND**

**Flood Risk**

**Flood Zones**

- Flood Zone 3b
- Flood Zone 3a
- Flood Zone 2

**Climate Change**

- Climate Change Central
- Climate Change Higher Central
- Climate Change Upper

**Surface Water**

- uFMfSW 30-year Extent
- uFMfSW 100-year Extent
- uFMfSW 1,000-year Extent

**Area Susceptible to Groundwater Flooding**

- < 25%
- >= 25% <50%
- >= 50% <75%
- >= 75%

**100 year event**

**Depth (m)**

- 0 - 0.10
- 0.10 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 2.50
- 2.50 - 3.00
- 3.00 - 3.50
- 3.50 - 4.00
- >4.00

**Velocity (m/s)**

- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

**Hazard Rating**

- Very low hazard - caution
- Danger for some
- Danger for most
- Danger for all

**Source Protection Zones**

- Zone 1
- Zone 2
- Zone 3



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**LEGEND**

**Authority Information**

- Council Boundary
- Potential Site Allocations
- Main River
- Detailed River Network

**Defences**

- Embankment
- Wall
- Area benefiting from defence

**Flood Warning and Flood Alert Areas**

- Flood Warning Area
- Flood Alert

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OSNGR: 563558, 267907

Area: 20.0 ha

MIXED

Proposed Development Details:

Flood Zone Coverage

FZ3b : 3%

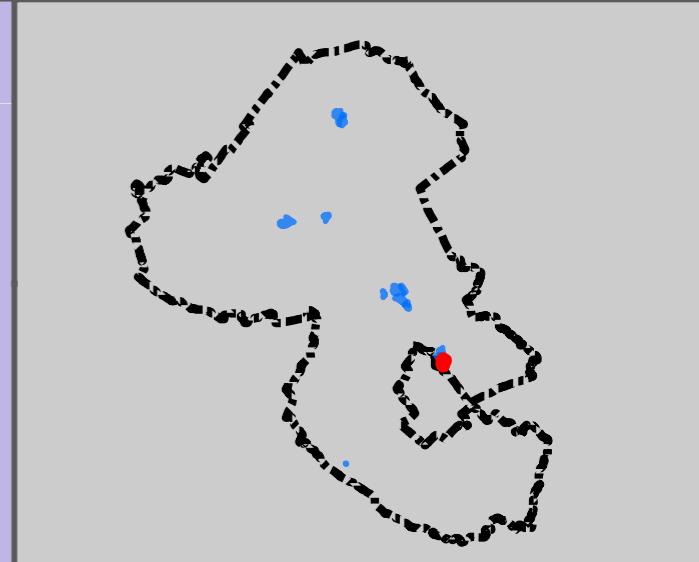
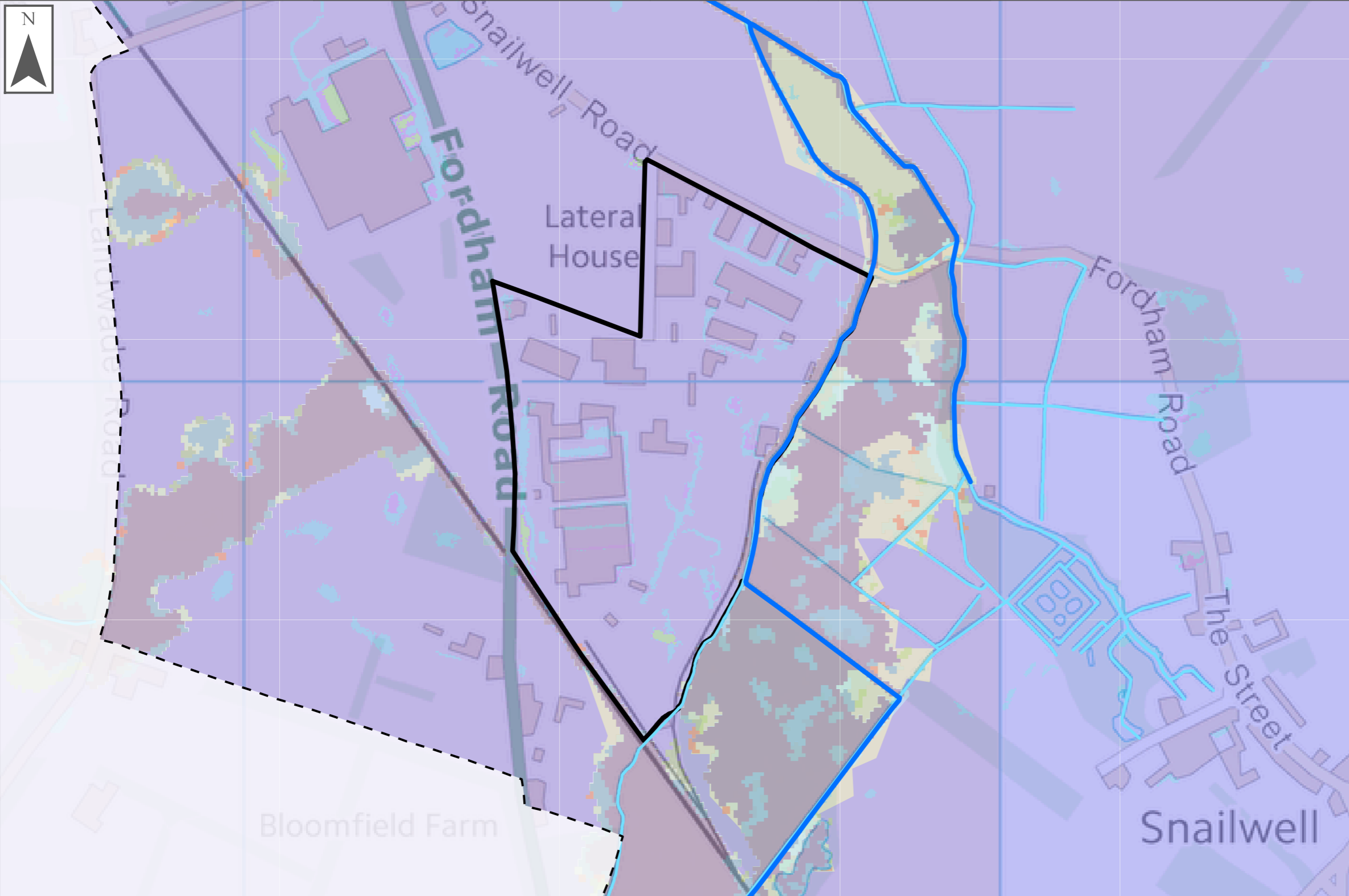
FZ3a: 3%

FZ2: 4%

FZ1: 96%

Employment

STRATEGIC FLOOD RISK ASSESSMENT



**LEGEND**

**Flood Risk**

**Flood Zones**

- Flood Zone 3b
- Flood Zone 3a
- Flood Zone 2

**Climate Change**

- Climate Change Central
- Climate Change Higher Central
- Climate Change Upper

**Surface Water**

- uFMfSW 30-year Extent
- uFMfSW 100-year Extent
- uFMfSW 1,000-year Extent

**Area Susceptible to Groundwater Flooding**

- < 25%
- >= 25% <50%
- >= 50% <75%
- >= 75%

**100 year event**

**Depth (m)**

- 0 - 0.10
- 0.10 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 2.50
- 2.50 - 3.00
- 3.00 - 3.50
- 3.50 - 4.00
- >4.00

**Velocity (m/s)**

- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

**Hazard Rating**

- Very low hazard - caution
- Danger for some
- Danger for most
- Danger for all

**Source Protection Zones**

- Zone 1
- Zone 2
- Zone 3



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**LEGEND**

**Authority Information**

- Council Boundary
- Potential Site Allocations
- Main River
- Detailed River Network

**Defences**

- Embankment
- Wall
- Area benefiting from defence

**Flood Warning and Flood Alert Areas**

- Flood Warning Area
- Flood Alert

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OSNGR: 555140, 287494

Area: 33.0 ha

MIXED

Proposed Development Details:

Flood Zone Coverage

FZ3b : 0%

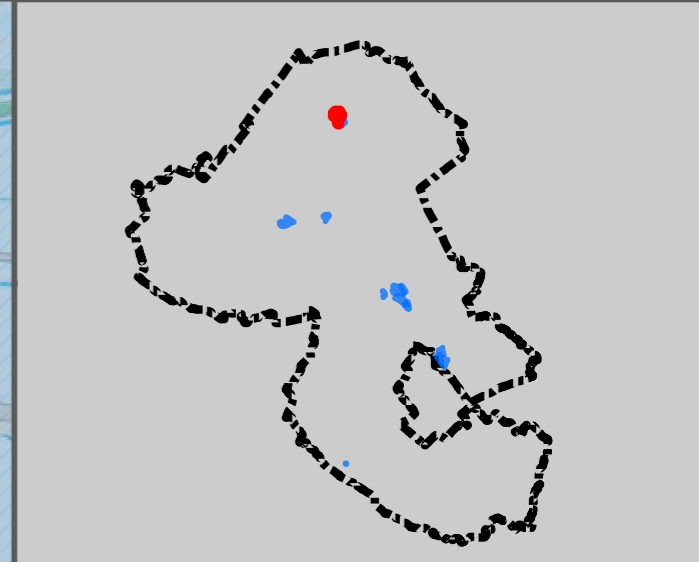
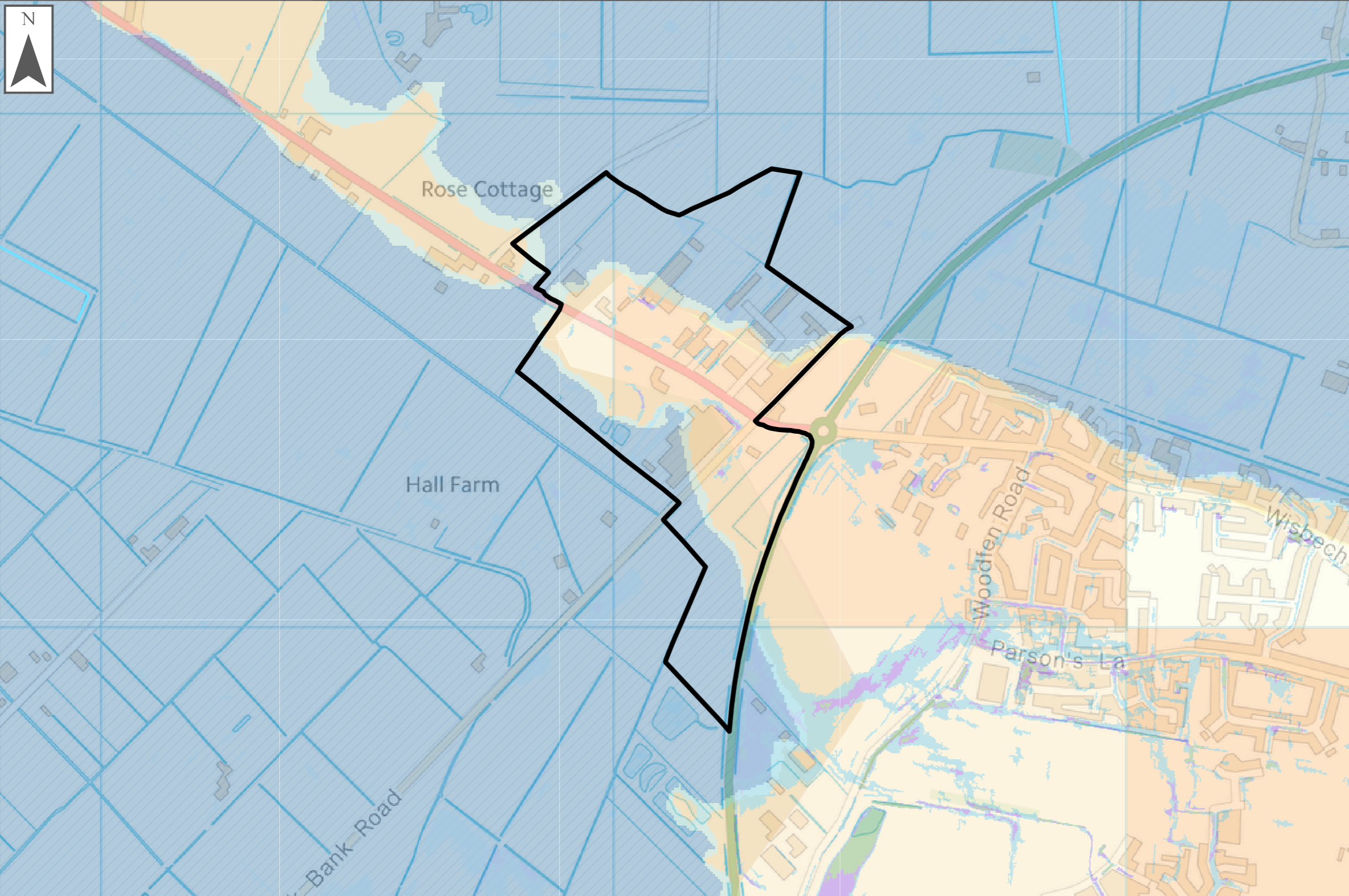
FZ3a: 51%

FZ2: 59%

FZ1: 41%

Employment

STRATEGIC FLOOD RISK ASSESSMENT



**LEGEND**

**Flood Risk**

**Flood Zones**

- Flood Zone 3b
- Flood Zone 3a
- Flood Zone 2

**Climate Change**

- Climate Change Central
- Climate Change Higher Central
- Climate Change Upper

**Surface Water**

- uFMfSW 30-year Extent
- uFMfSW 100-year Extent
- uFMfSW 1,000-year Extent

**Area Susceptible to Groundwater Flooding**

- < 25%
- >= 25% <50%
- >= 50% <75%
- >= 75%

**100 year event**

**Depth (m)**

- 0 - 0.10
- 0.10 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 2.50
- 2.50 - 3.00
- 3.00 - 3.50
- 3.50 - 4.00
- >4.00

**Velocity (m/s)**

- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

**Hazard Rating**

- Very low hazard - caution
- Danger for some
- Danger for most
- Danger for all

**Source Protection Zones**

- Zone 1
- Zone 2
- Zone 3

0250100150200250300

Meters

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**LEGEND**

**Authority Information**

- Council Boundary
- Potential Site Allocations
- Main River
- Detailed River Network

**Defences**

- Embankment
- Wall
- Area benefiting from defence

**Flood Warning and Flood Alert Areas**

- Flood Warning Area
- Flood Alert

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OSNGR: 555555, 287481

Area: 1.5 ha

GREENFIELD

Proposed Development Details:

Flood Zone Coverage

FZ3b : 0%

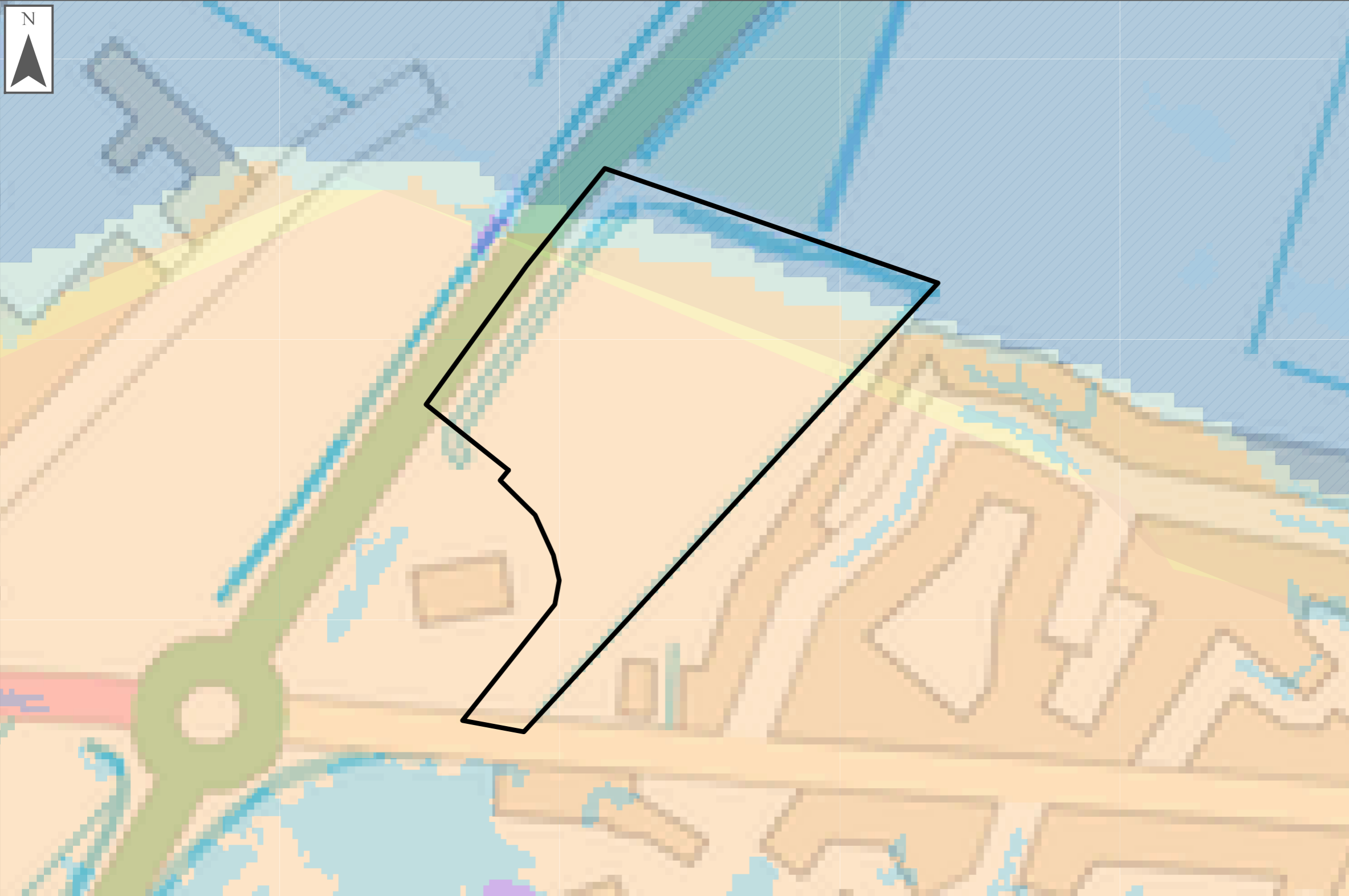
FZ3a: 11%

FZ2: 18%

FZ1: 82%

Employment

STRATEGIC FLOOD RISK ASSESSMENT



**LEGEND**

**Flood Risk**

**Flood Zones**

- Flood Zone 3b
- Flood Zone 3a
- Flood Zone 2

**Climate Change**

- Climate Change Central
- Climate Change Higher Central
- Climate Change Upper

**Surface Water**

- uFMfSW 30-year Extent
- uFMfSW 100-year Extent
- uFMfSW 1,000-year Extent

**Area Susceptible to Groundwater Flooding**

- < 25%
- >= 25% <50%
- >= 50% <75%
- >= 75%

**100 year event**

**Depth (m)**

- 0 - 0.10
- 0.10 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 2.50
- 2.50 - 3.00
- 3.00 - 3.50
- 3.50 - 4.00
- >4.00

**Velocity (m/s)**

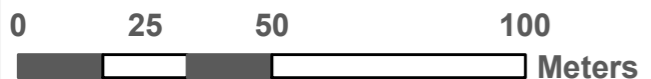
- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

**Hazard Rating**

- Very low hazard - caution
- Danger for some
- Danger for most
- Danger for all

**Source Protection Zones**

- Zone 1
- Zone 2
- Zone 3



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**LEGEND**

**Authority Information**

- Council Boundary
- Potential Site Allocations
- Main River
- Detailed River Network

**Defences**

- Embankment
- Wall
- Area benefiting from defence

**Flood Warning and Flood Alert Areas**

- Flood Warning Area
- Flood Alert

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OSNGR: 555458, 287002

Area: 17.3 ha

GREENFIELD

Proposed Development Details:

Flood Zone Coverage

FZ3b : 0%

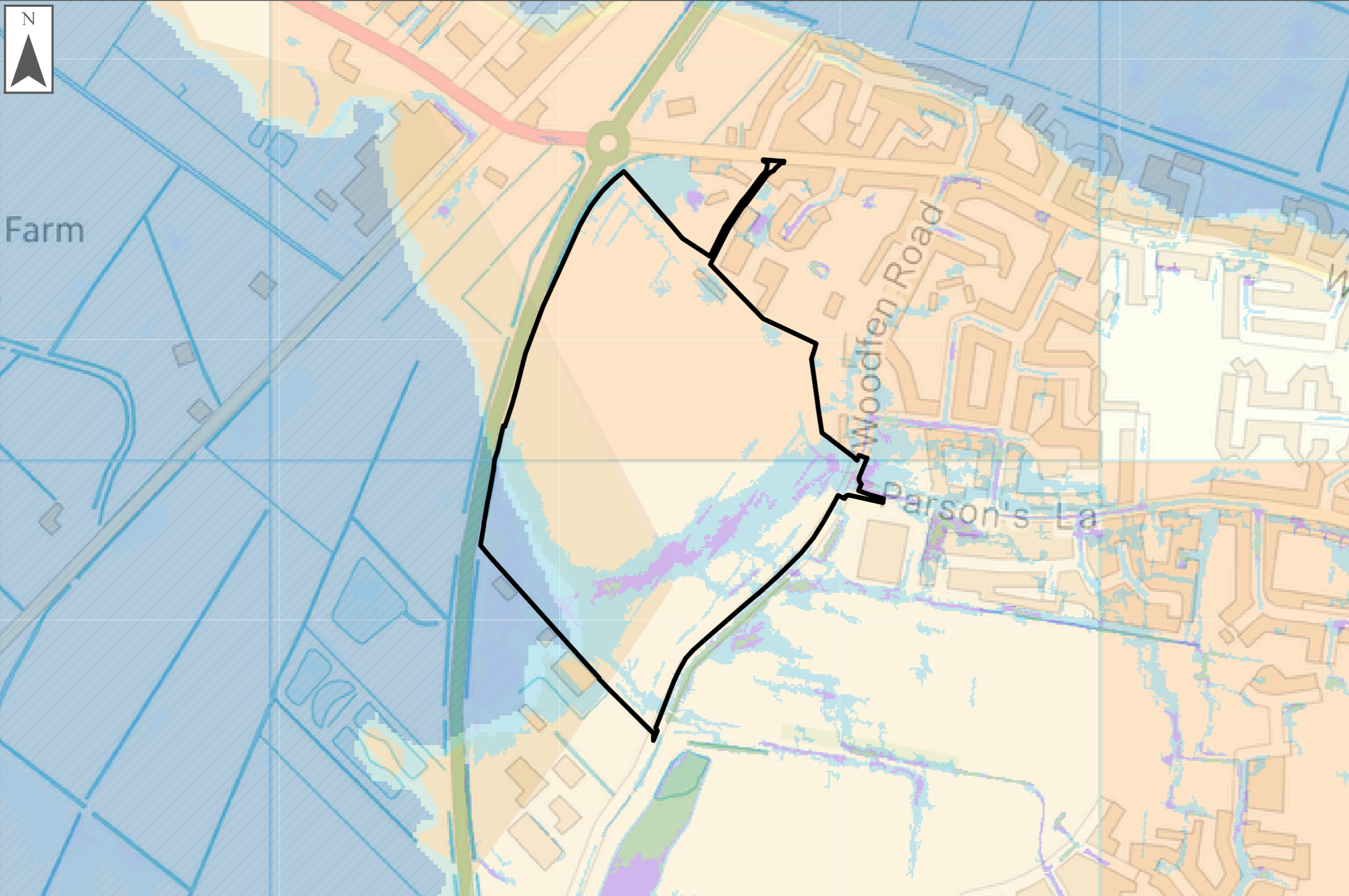
FZ3a: 4%

FZ2: 6%

FZ1: 94%

Mixed Use

STRATEGIC FLOOD RISK ASSESSMENT



**LEGEND**

**Flood Risk**

**Flood Zones**

- Flood Zone 3b
- Flood Zone 3a
- Flood Zone 2

**Climate Change**

- Climate Change Central
- Climate Change Higher Central
- Climate Change Upper

**Surface Water**

- uFMfSW 30-year Extent
- uFMfSW 100-year Extent
- uFMfSW 1,000-year Extent

**Area Susceptible to Groundwater Flooding**

- < 25%
- >= 25% <50%
- >= 50% <75%
- >= 75%

**100 year event**

**Depth (m)**

- 0 - 0.10
- 0.10 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 2.50
- 2.50 - 3.00
- 3.00 - 3.50
- 3.50 - 4.00
- >4.00

**Velocity (m/s)**

- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

**Hazard Rating**

- Very low hazard - caution
- Danger for some
- Danger for most
- Danger for all

**Source Protection Zones**

- Zone 1
- Zone 2
- Zone 3

0 2550 100 150 200 250 300 Meters

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**LEGEND**

**Authority Information**

- Council Boundary
- Potential Site Allocations
- Main River
- Detailed River Network

**Defences**

- Embankment
- Wall
- Area benefiting from defence

**Flood Warning and Flood Alert Areas**

- Flood Warning Area
- Flood Alert

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OSNGR: 555790, 259892

Area: 0.69 ha

BROWNFIELD

Proposed Development Details:

Flood Zone Coverage

FZ3b : 0%

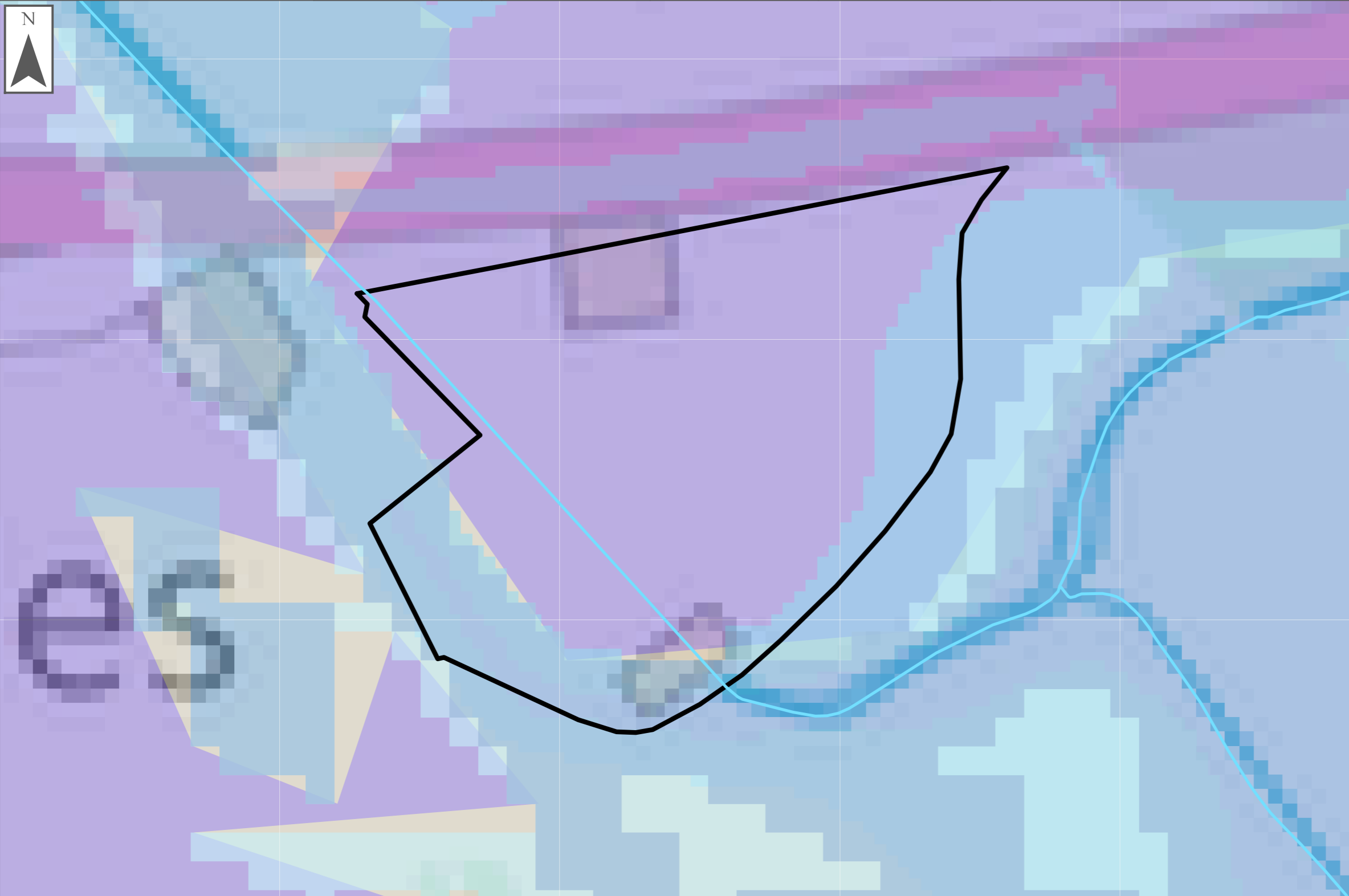
FZ3a: 13%

FZ2: 13%

FZ1: 87%

Gypsy and Traveller Pitches

STRATEGIC FLOOD RISK ASSESSMENT



**LEGEND**

**Flood Risk**

**Flood Zones**

- Flood Zone 3b
- Flood Zone 3a
- Flood Zone 2

**Climate Change**

- Climate Change Central
- Climate Change Higher Central
- Climate Change Upper

**Surface Water**

- uFMfSW 30-year Extent
- uFMfSW 100-year Extent
- uFMfSW 1,000-year Extent

**Area Susceptible to Groundwater Flooding**

- < 25%
- >= 25% <50%
- >= 50% <75%
- >= 75%

**100 year event**

**Depth (m)**

- 0 - 0.10
- 0.10 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 2.50
- 2.50 - 3.00
- 3.00 - 3.50
- 3.50 - 4.00
- >4.00

**Velocity (m/s)**

- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

**Hazard Rating**

- Very low hazard - caution
- Danger for some
- Danger for most
- Danger for all

**Source Protection Zones**

- Zone 1
- Zone 2
- Zone 3



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**LEGEND**

**Authority Information**

- Council Boundary
- Potential Site Allocations
- Main River
- Detailed River Network

**Defences**

- Embankment
- Wall
- Area benefiting from defence

**Flood Warning and Flood Alert Areas**

- Flood Warning Area
- Flood Alert

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**JBA consulting**

OSNGR: 560330, 273714

Area: 10.8 ha

GREENFIELD

Proposed Development Details:

Flood Zone Coverage

FZ3b : 0%

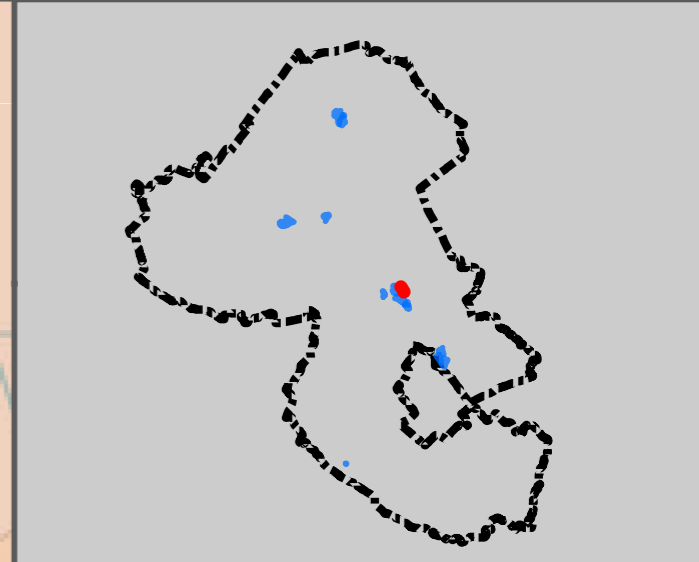
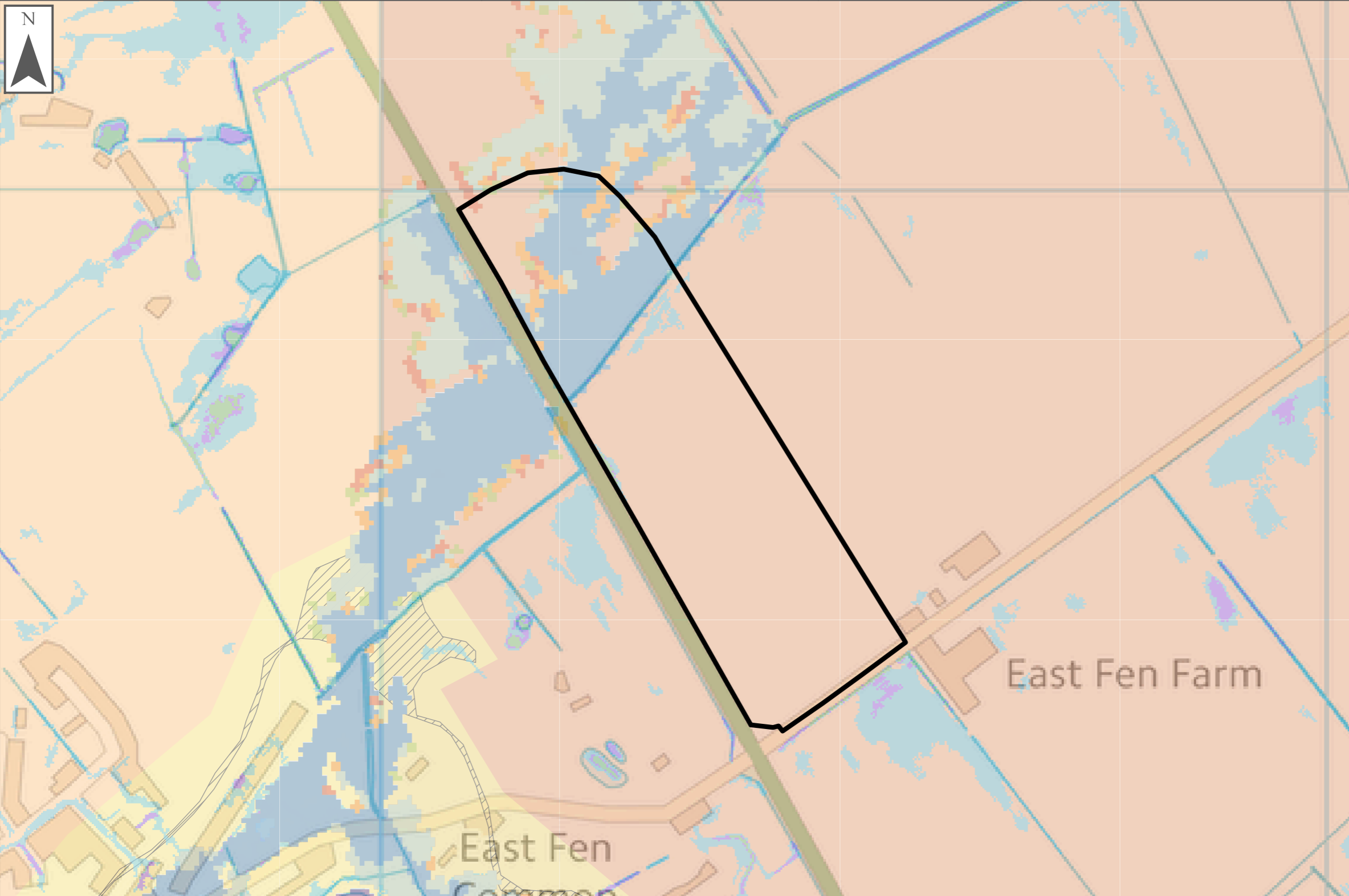
FZ3a: 17%

FZ2: 19%

FZ1: 81%

Employment

STRATEGIC FLOOD RISK ASSESSMENT



**LEGEND**

**Flood Risk**

**Flood Zones**

- Flood Zone 3b
- Flood Zone 3a
- Flood Zone 2

**Climate Change**

- Climate Change Central
- Climate Change Higher Central
- Climate Change Upper

**Surface Water**

- uFMfSW 30-year Extent
- uFMfSW 100-year Extent
- uFMfSW 1,000-year Extent

**Area Susceptible to Groundwater Flooding**

- < 25%
- >= 25% <50%
- >= 50% <75%
- >= 75%

**100 year event**

**Depth (m)**

- 0 - 0.10
- 0.10 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 2.50
- 2.50 - 3.00
- 3.00 - 3.50
- 3.50 - 4.00
- >4.00

**Velocity (m/s)**

- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

**Hazard Rating**

- Very low hazard - caution
- Danger for some
- Danger for most
- Danger for all

**Source Protection Zones**

- Zone 1
- Zone 2
- Zone 3



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**LEGEND**

**Authority Information**

- Council Boundary
- Potential Site Allocations
- Main River
- Detailed River Network

**Defences**

- Embankment
- Wall
- Area benefiting from defence

**Flood Warning and Flood Alert Areas**

- Flood Warning Area
- Flood Alert

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OSNGR: 560107, 272954

Area: 22.8 ha

GREENFIELD

Proposed Development Details:

Flood Zone Coverage

FZ3b : 56%

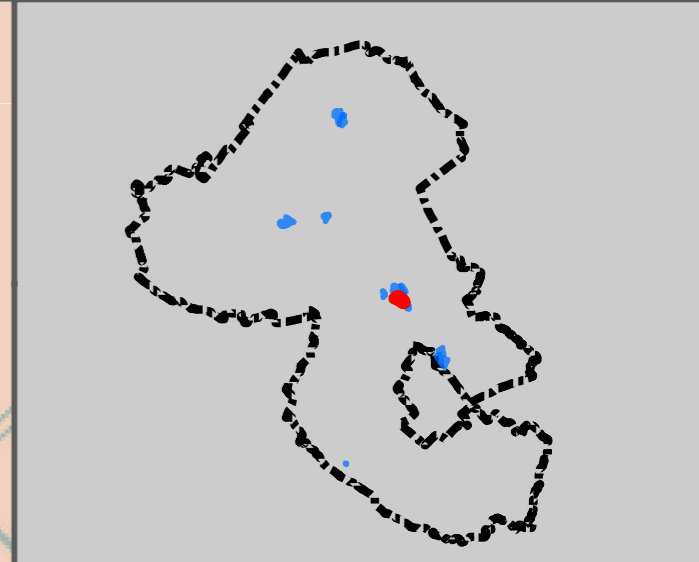
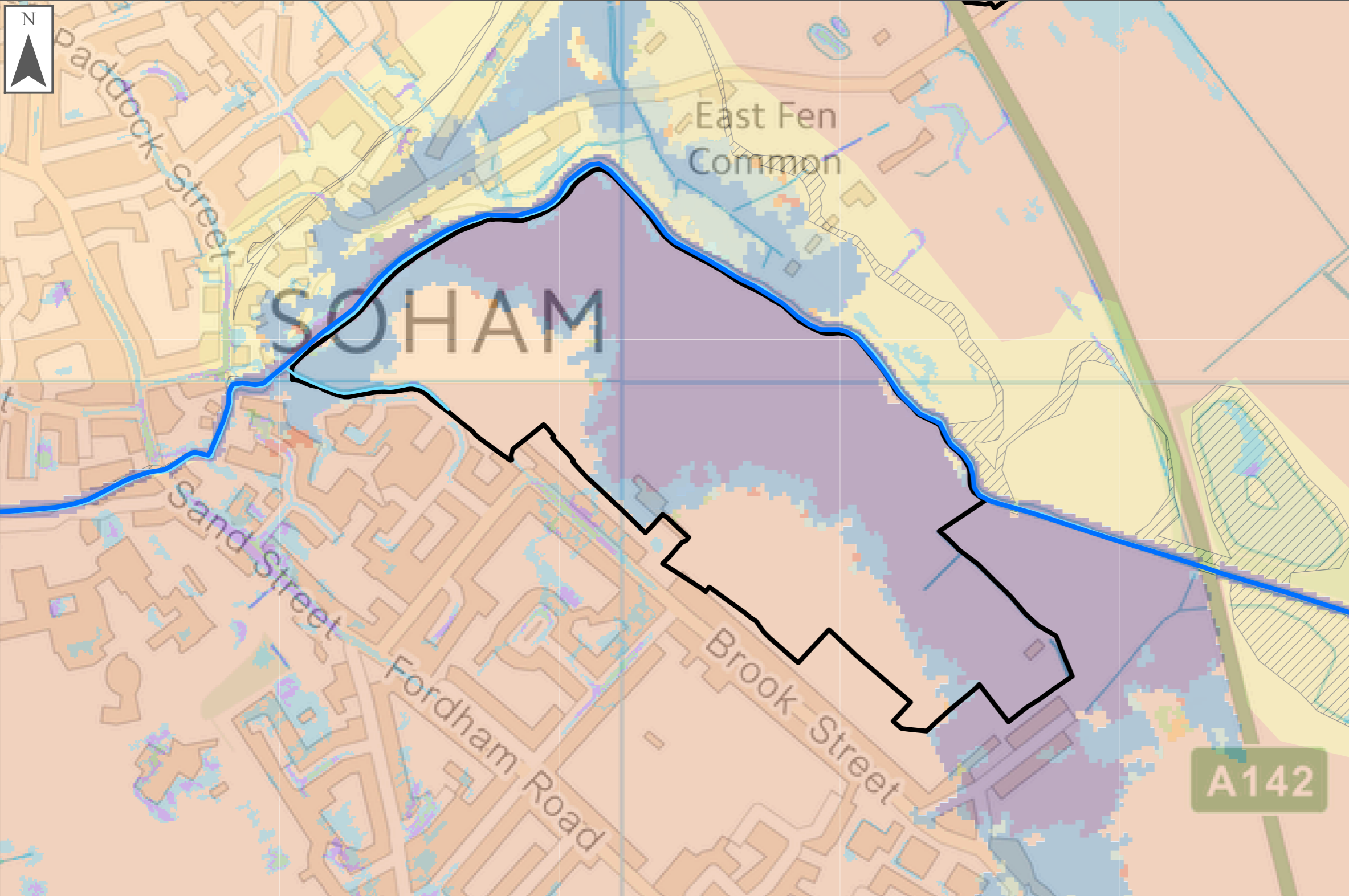
FZ3a: 69%

FZ2: 70%

FZ1: 30%

Housing

STRATEGIC FLOOD RISK ASSESSMENT



**LEGEND**

**Flood Risk**

**Flood Zones**

- Flood Zone 3b
- Flood Zone 3a
- Flood Zone 2

**Climate Change**

- Climate Change Central
- Climate Change Higher Central
- Climate Change Upper

**Surface Water**

- uFMfSW 30-year Extent
- uFMfSW 100-year Extent
- uFMfSW 1,000-year Extent

**Area Susceptible to Groundwater Flooding**

- < 25%
- >= 25% <50%
- >= 50% <75%
- >= 75%

**100 year event**

**Depth (m)**

- 0 - 0.10
- 0.10 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 2.50
- 2.50 - 3.00
- 3.00 - 3.50
- 3.50 - 4.00
- >4.00

**Velocity (m/s)**

- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

**Hazard Rating**

- Very low hazard - caution
- Danger for some
- Danger for most
- Danger for all

**Source Protection Zones**

- Zone 1
- Zone 2
- Zone 3

0 25 50 100 150 200 250 300 Meters

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**LEGEND**

**Authority Information**

- Council Boundary
- Potential Site Allocations
- Main River
- Detailed River Network

**Defences**

- Embankment
- Wall
- Area benefiting from defence

**Flood Warning and Flood Alert Areas**

- Flood Warning Area
- Flood Alert

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OSNGR: 560665, 272326

Area: 7.0 ha

GREENFIELD

Proposed Development Details:

Flood Zone Coverage

FZ3b : <1%

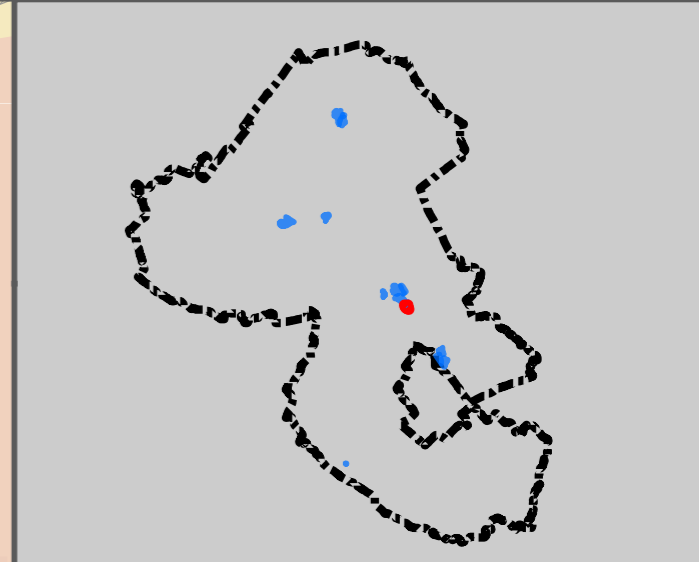
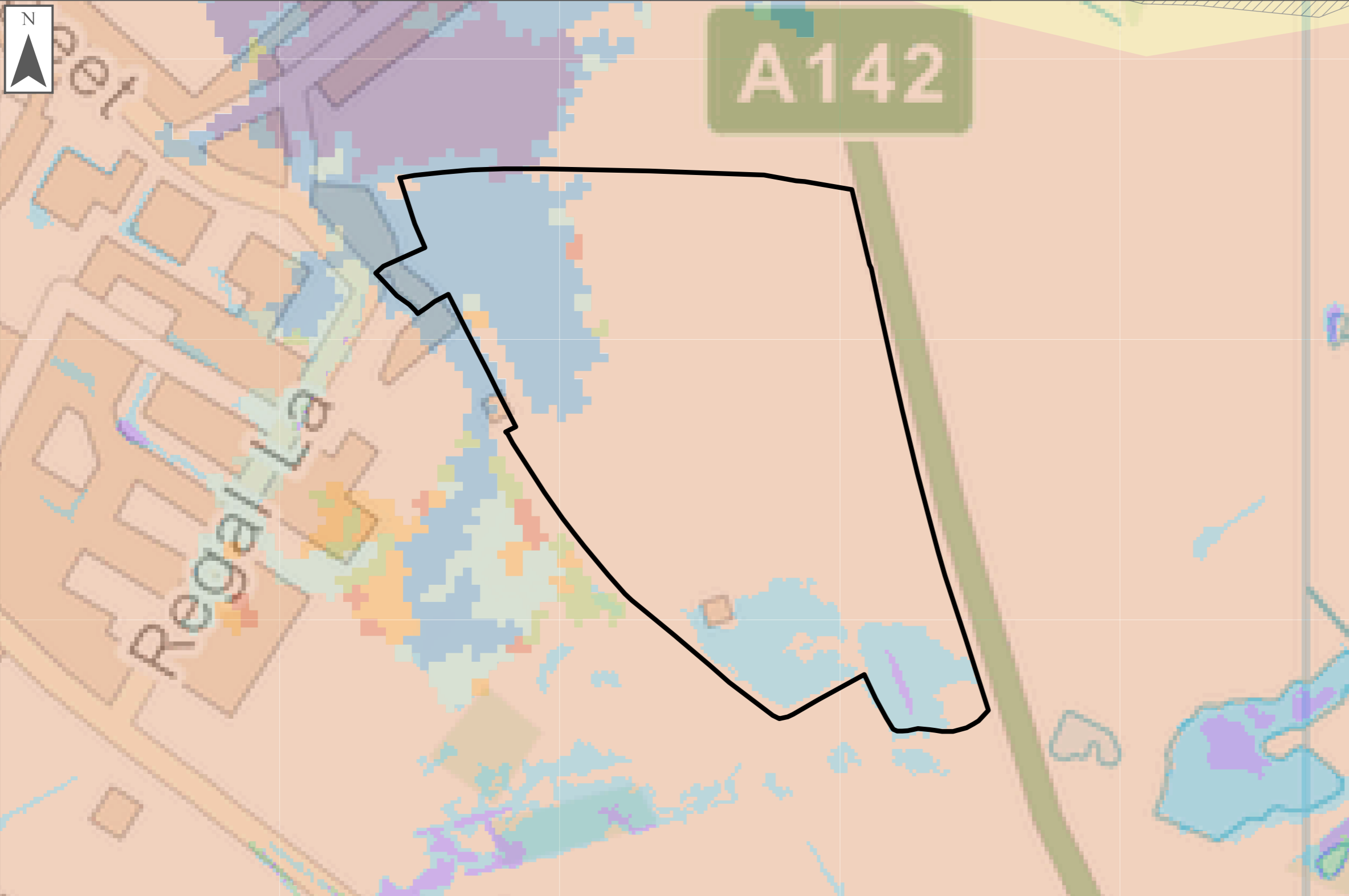
FZ3a: 15%

FZ2: 16%

FZ1: 84%

Housing

STRATEGIC FLOOD RISK ASSESSMENT



**LEGEND**

**Flood Risk**

**Flood Zones**

- Flood Zone 3b
- Flood Zone 3a
- Flood Zone 2

**Climate Change**

- Climate Change Central
- Climate Change Higher Central
- Climate Change Upper

**Surface Water**

- uFMfSW 30-year Extent
- uFMfSW 100-year Extent
- uFMfSW 1,000-year Extent

**Area Susceptible to Groundwater Flooding**

- < 25%
- >= 25% <50%
- >= 50% <75%
- >= 75%

**100 year event**

**Depth (m)**

- 0 - 0.10
- 0.10 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 2.50
- 2.50 - 3.00
- 3.00 - 3.50
- 3.50 - 4.00
- >4.00

**Velocity (m/s)**

- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

**Hazard Rating**

- Very low hazard - caution
- Danger for some
- Danger for most
- Danger for all

**Source Protection Zones**

- Zone 1
- Zone 2
- Zone 3

0 25 50 100 150 Meters

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**LEGEND**

**Authority Information**

- Council Boundary
- Potential Site Allocations
- Main River
- Detailed River Network

**Defences**

- Embankment
- Wall
- Area benefiting from defence

**Flood Warning and Flood Alert Areas**

- Flood Warning Area
- Flood Alert

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**JBA consulting**



OSNGR: 560607, 272585

Area: 4.5 ha

GREENFIELD

Proposed Development Details:

Flood Zone Coverage

FZ3b : 38%

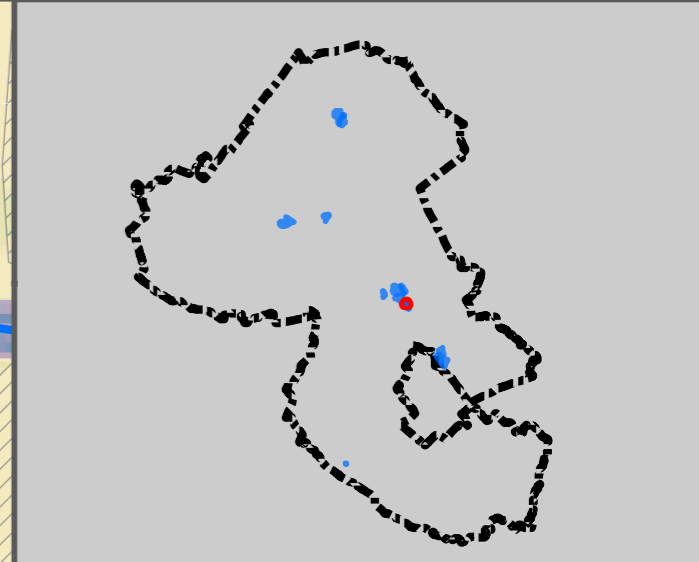
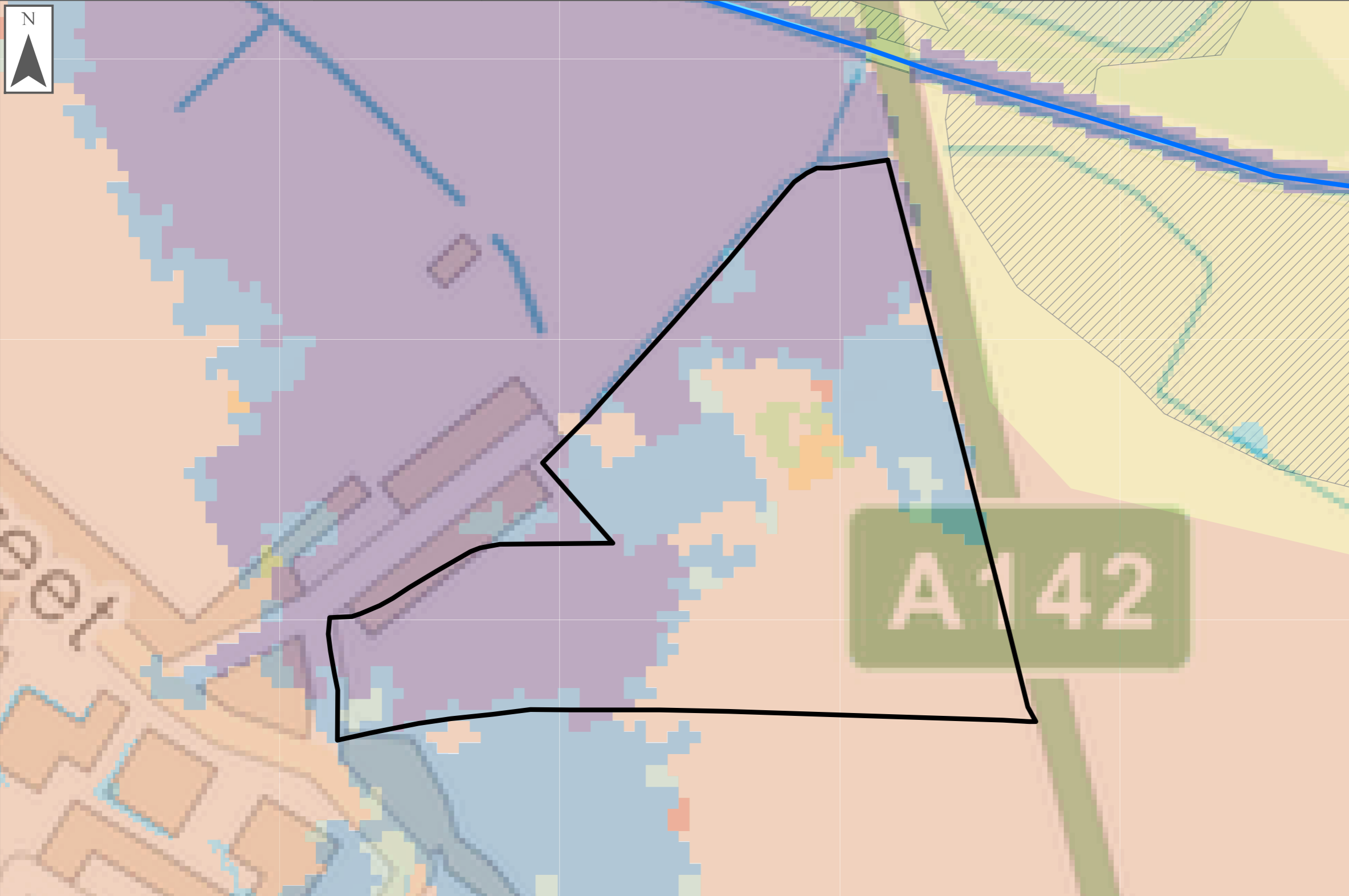
FZ3a: 59%

FZ2: 62%

FZ1: 38%

Housing

STRATEGIC FLOOD RISK ASSESSMENT



**LEGEND**

**Flood Risk**

**Flood Zones**

- Flood Zone 3b
- Flood Zone 3a
- Flood Zone 2

**Climate Change**

- Climate Change Central
- Climate Change Higher Central
- Climate Change Upper

**Surface Water**

- uFMfSW 30-year Extent
- uFMfSW 100-year Extent
- uFMfSW 1,000-year Extent

**Area Susceptible to Groundwater Flooding**

- < 25%
- >= 25% <50%
- >= 50% <75%
- >= 75%

**100 year event**

**Depth (m)**

- 0 - 0.10
- 0.10 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 2.50
- 2.50 - 3.00
- 3.00 - 3.50
- 3.50 - 4.00
- >4.00

**Velocity (m/s)**

- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

**Hazard Rating**

- Very low hazard - caution
- Danger for some
- Danger for most
- Danger for all

**Source Protection Zones**

- Zone 1
- Zone 2
- Zone 3



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**LEGEND**

**Authority Information**

- Council Boundary
- Potential Site Allocations
- Main River
- Detailed River Network

**Defences**

- Embankment
- Wall
- Area benefiting from defence

**Flood Warning and Flood Alert Areas**

- Flood Warning Area
- Flood Alert

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OSNGR: 559883, 273658

Area: 33.4 ha

GREENFIELD

Proposed Development Details:

Flood Zone Coverage

FZ3b : 0%

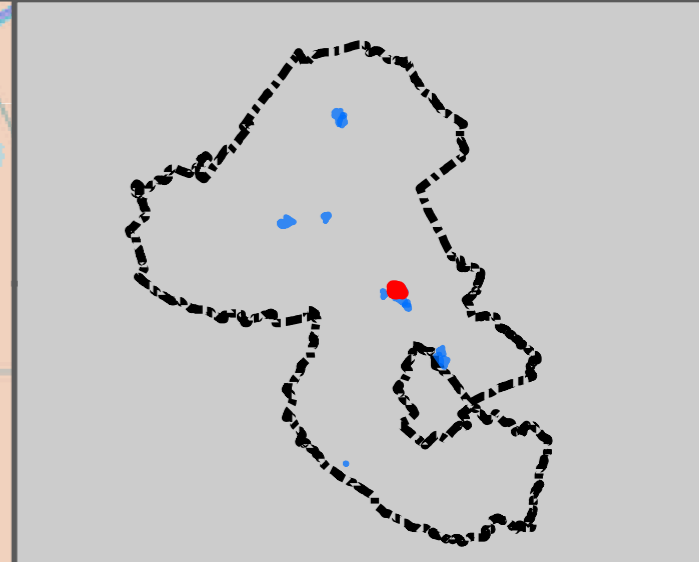
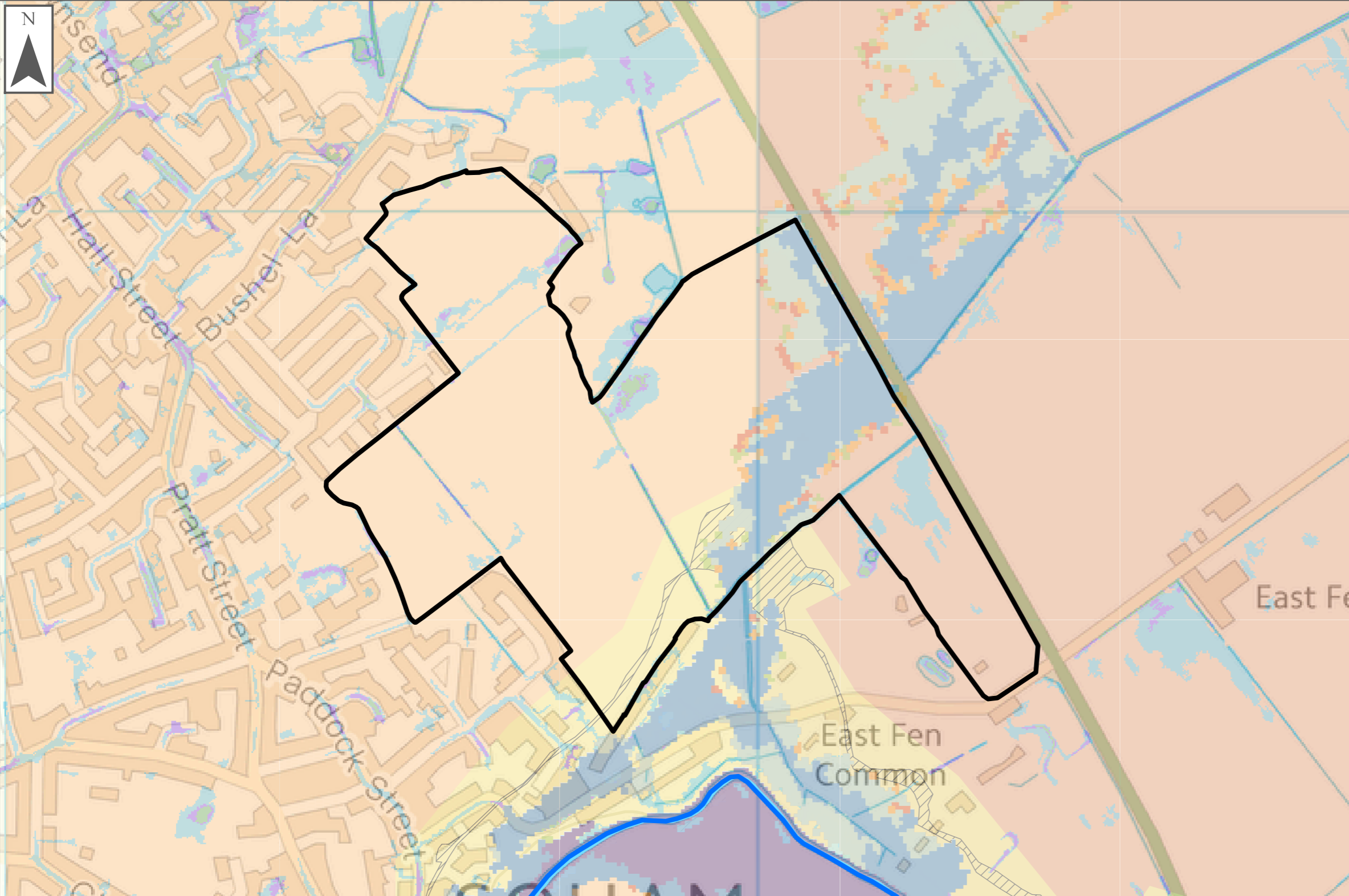
FZ3a: 10%

FZ2: 13%

FZ1: 87%

Mixed Use

STRATEGIC FLOOD RISK ASSESSMENT



**LEGEND**

**Flood Risk**

**Flood Zones**

- Flood Zone 3b
- Flood Zone 3a
- Flood Zone 2

**Climate Change**

- Climate Change Central
- Climate Change Higher Central
- Climate Change Upper

**Surface Water**

- uFMfSW 30-year Extent
- uFMfSW 100-year Extent
- uFMfSW 1,000-year Extent

**Area Susceptible to Groundwater Flooding**

- < 25%
- >= 25% <50%
- >= 50% <75%
- >= 75%

**100 year event**

**Depth (m)**

- 0 - 0.10
- 0.10 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 2.50
- 2.50 - 3.00
- 3.00 - 3.50
- 3.50 - 4.00
- >4.00

**Velocity (m/s)**

- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

**Hazard Rating**

- Very low hazard - caution
- Danger for some
- Danger for most
- Danger for all

**Source Protection Zones**

- Zone 1
- Zone 2
- Zone 3

0 250 100 150 200 250 300 Meters

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**LEGEND**

**Authority Information**

- Council Boundary
- Potential Site Allocations
- Main River
- Detailed River Network

**Defences**

- Embankment
- Wall
- Area benefiting from defence

**Flood Warning and Flood Alert Areas**

- Flood Warning Area
- Flood Alert

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OSNGR: 558773, 273349

Area: 4.1 ha

GREENFIELD

Proposed Development Details:

Flood Zone Coverage

FZ3b : 1%

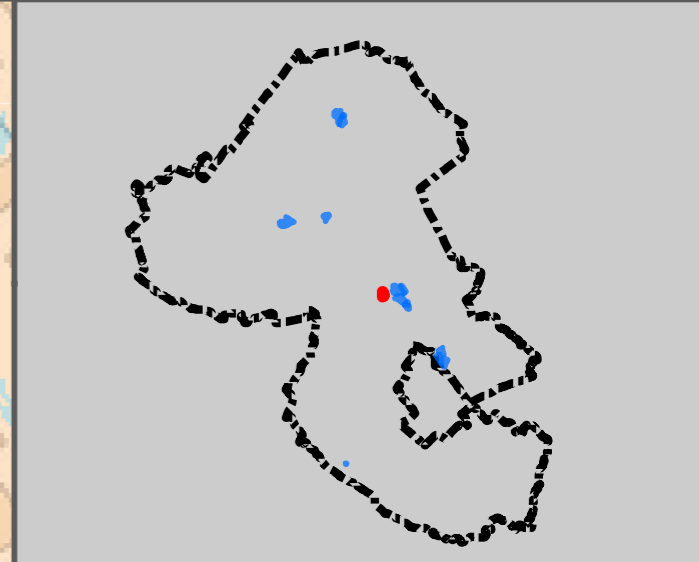
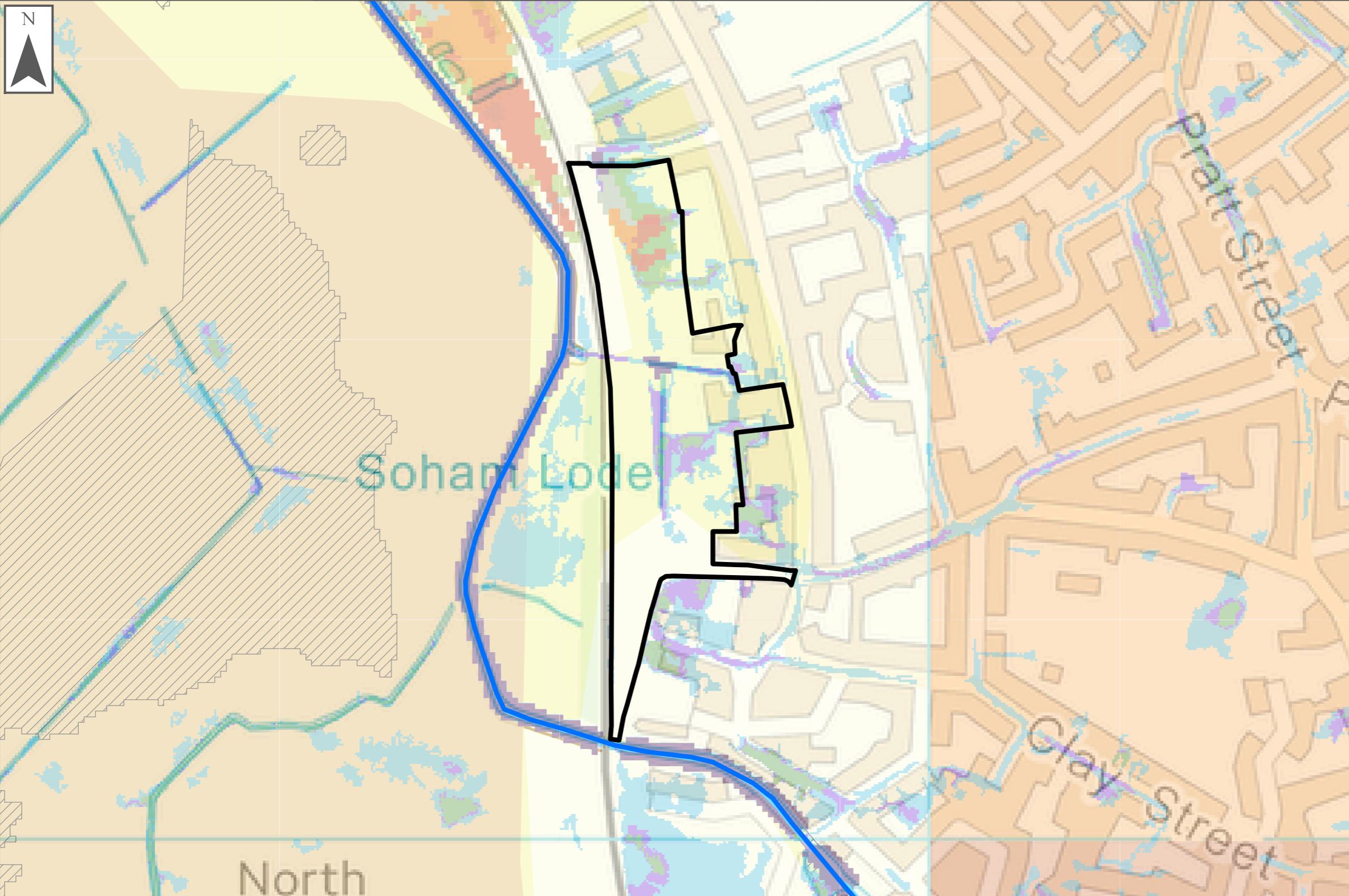
FZ3a: 1%

FZ2: 3%

FZ1: 97%

Mixed Use

STRATEGIC FLOOD RISK ASSESSMENT



**LEGEND**

**Flood Risk**

**Flood Zones**

- Flood Zone 3b
- Flood Zone 3a
- Flood Zone 2

**Climate Change**

- Climate Change Central
- Climate Change Higher Central
- Climate Change Upper

**Surface Water**

- uFMfSW 30-year Extent
- uFMfSW 100-year Extent
- uFMfSW 1,000-year Extent

**Area Susceptible to Groundwater Flooding**

- < 25%
- >= 25% <50%
- >= 50% <75%
- >= 75%

**100 year event**

**Depth (m)**

- 0 - 0.10
- 0.10 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 2.50
- 2.50 - 3.00
- 3.00 - 3.50
- 3.50 - 4.00
- >4.00

**Velocity (m/s)**

- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

**Hazard Rating**

- Very low hazard - caution
- Danger for some
- Danger for most
- Danger for all

**Source Protection Zones**

- Zone 1
- Zone 2
- Zone 3



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**LEGEND**

**Authority Information**

- Council Boundary
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- Main River
- Detailed River Network

**Defences**

- Embankment
- Wall
- Area benefiting from defence

**Flood Warning and Flood Alert Areas**

- Flood Warning Area
- Flood Alert

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OSNGR: 551136, 279017

Area: 33.5 ha

GREENFIELD

Proposed Development Details:

Flood Zone Coverage

FZ3b : 0%

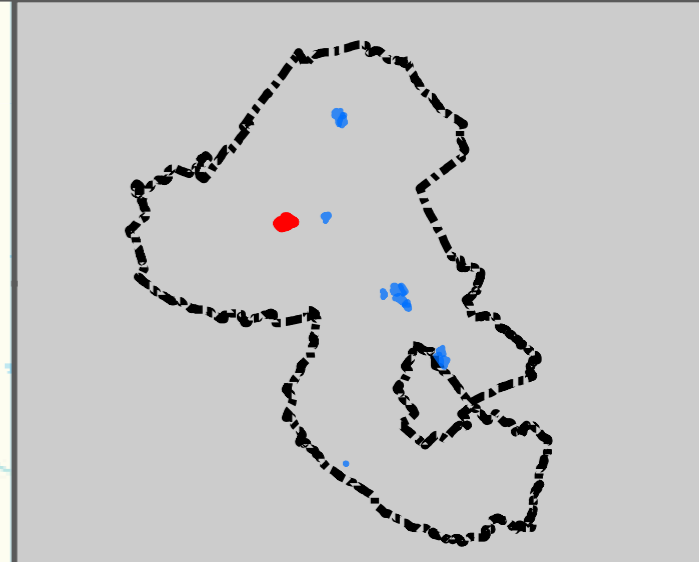
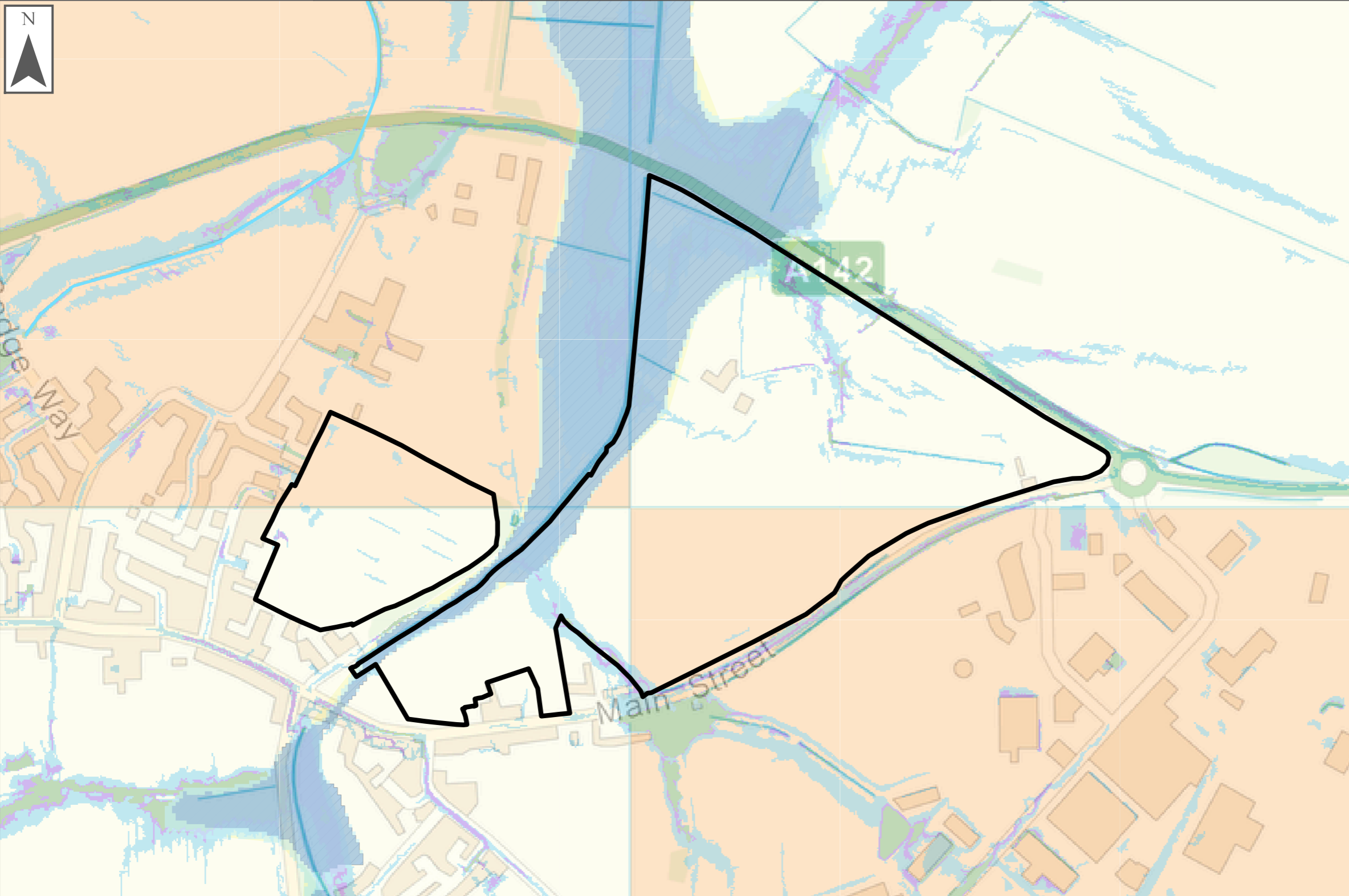
FZ3a: 11%

FZ2: 12%

FZ1: 88%

Mixed use

STRATEGIC FLOOD RISK ASSESSMENT



**LEGEND**

**Flood Risk**

**Flood Zones**

- Flood Zone 3b
- Flood Zone 3a
- Flood Zone 2

**Climate Change**

- Climate Change Central
- Climate Change Higher Central
- Climate Change Upper

**Surface Water**

- uFMfSW 30-year Extent
- uFMfSW 100-year Extent
- uFMfSW 1,000-year Extent

**Area Susceptible to Groundwater Flooding**

- < 25%
- >= 25% <50%
- >= 50% <75%
- >= 75%

**100 year event**

**Depth (m)**

- 0 - 0.10
- 0.10 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 2.50
- 2.50 - 3.00
- 3.00 - 3.50
- 3.50 - 4.00
- >4.00

**Velocity (m/s)**

- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

**Hazard Rating**

- Very low hazard - caution
- Danger for some
- Danger for most
- Danger for all

**Source Protection Zones**

- Zone 1
- Zone 2
- Zone 3



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**LEGEND**

**Authority Information**

- Council Boundary
- Potential Site Allocations
- Main River
- Detailed River Network

**Defences**

- Embankment
- Wall
- Area benefiting from defence

**Flood Warning and Flood Alert Areas**

- Flood Warning Area
- Flood Alert

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# 1 Appendix Mapping: supporting information

## 1.1 Flood Zones

The data used to prepare the fluvial mapping for this study is based on Flood Zones and the results from hydraulic models either provided by the Environment Agency or prepared for the purposes of this Strategic Flood Risk Assessment (SFRA). Hydraulic models used include:

- Fenland
- Eastern Rivers 'MP5'
- River Snail 'Soham'

### 1.1.1 Flood Zones 2 and 3a

Flood Zones 2 and 3a have been taken from the Environment Agency's Flood Zone 2 and 3, as shown on their long term flood risk information [website](#).

### 1.1.2 Flood Zone 3b

Flood Zone 3b has been identified as land which would flood with an annual probability of 1 in 20 years (5% AEP). It has been derived from the 20-year defended modelled flood extent where detailed hydraulic models exist. Flood Zone 3b represents the functional floodplain, in accordance with National Planning Policy Framework, the functional floodplain / Flood Zone 3b takes into account the effects of defences and other flood risk management infrastructure.

## 1.2 Climate change

Climate change is expected to increase the frequency, extent and impact of flooding, reflected in peak river flows. Wetter winters and more intense rainfall may increase fluvial flooding and surface water runoff and there may be increased storm intensity in summer. Increased river levels may also increase flood risk. The three climate change allowances for the '2080's were modelled by re-running the Environment Agency's detailed models.

The mapping provides a strategic assessment of climate change risk – developers should undertake detailed modelling of climate change allowances as part of a site-specific FRA, following the guidance set out in the SFRA main report.

## 1.3 Defended and undefended flood risk layers

The following table provides a summary of which scenarios, defended or undefended, are used in hydraulic modelling to inform the flood risk for the Flood Zones / climate change layers above.

Flood Risk layer	Defended / Undefended modelling used
Flood Zone 3b	Defended
Flood Zone 3a	Undefended
Flood Zone 2	Undefended
Climate Change	Defended

## 1.4 Surface Water

Mapping of surface water flood risk in East Cambridgeshire district has been taken from the updated Flood Map for Surface Water (uFMfSW) published online by the Environment Agency.

Category	Definition
High	Flooding occurring as a result of rainfall with a greater than 1 in 30 chance in any given year (annual probability of flooding 3.3%)
Medium	Flooding occurring as a result of rainfall of between 1 in 100 (1%) and 1 in 30 (3.3%) chance in any given year.
Low	Flooding occurring as a result of rainfall of between 1 in 1,000 (0.1%) and 1 in 100 (1%) chance in any given year.
Very Low	Flooding occurring as a result of rainfall with less than 1 in 1,000 (0.1%) chance in any given year.

The uFMfSW is derived primarily from identifying topographical flow paths of existing watercourses or dry valleys that contain some isolated ponding locations in low lying areas.

Although the uFMfSW offers improvement on previously available datasets, the results should not be used to understand flood risk for individual properties. The results should be used for high level assessments such as SFRA for local authorities. If a particular site is indicated in the Environment Agency mapping to be at risk from surface water flooding, a more detailed assessment should be required to more accurately illustrate the flood risk at a site specific scale. Such an assessment will use the uFMfSW in partnership with other sources of local flooding information to confirm the presence of a surface water risk at that particular location.

## 1.5 Groundwater

Mapping of groundwater flood risk has been based on the Areas Susceptible to Groundwater (AStGWF) dataset. The AStGWF dataset is a strategic-scale map showing groundwater flood areas on a 1km square grid. It shows the proportion of each 1km grid square, where geological and hydrogeological conditions indicate that groundwater might emerge. It does not show the likelihood of groundwater flooding occurring and does not take account of the chance of flooding from groundwater rebound. This dataset covers a large area of land, and only isolated locations within the overall susceptible area are actually likely to suffer the consequences of groundwater flooding.

The AStGWF data is indicative and should only be used in combination with other information, for example local data or historical data. It should not be used as sole evidence for any specific flood risk management, land use planning or other decisions at any scale. However, the data can help to identify areas for assessment at a local scale where finer resolution datasets exist.

## 1.6 Source Protection Zones

In addition to the AStGWF data the Environment Agency also defines Groundwater Source Protection Zones in the vicinity of groundwater abstraction points. These areas are defined to protect areas of groundwater that are used for potable supply, including public/private potable supply, (including mineral and bottled water) or for use in the production of commercial food and drinks. The Groundwater SPZ requires attenuated storage of runoff to prevent infiltration and contamination. The definition of each zone is shown below:

Zone 1 (Inner Protection Zone) – Most sensitive zone: defined as the 50-day travel time from any point below the water table to the source. This zone has a minimum radius of 50 metres

Zone 2 (Outer Protection Zone) – Also sensitive to contamination: defined by a 400-day travel time from a point below the water table. This zone has a minimum radius around the source, depending on the size of the abstraction

Zone 3 (Total Catchment) - Defined as the area around a source within which all groundwater recharge is presumed to be discharged at the source. In confined aquifers, the source catchment may be displaced some distance from the source. For heavily exploited aquifers, the final Source Catchment Protection Zone can be defined as the whole aquifer recharge area where the ratio of groundwater abstraction to aquifer recharge (average recharge multiplied by outcrop area) is  $>0.75$ . Individual source protection areas will still be assigned to assist operators in catchment management

## 1.7 River networks

Main Rivers are represented by the Environment Agency's Statutory Main River layer. Ordinary Watercourses are represented by the Environment Agency's Detailed River Network Layer.

## 1.8 Sewer and reservoir flooding

Due to licencing and confidentiality restrictions, sewer flooding data has not been represented on the mapping. Please see the main SFRA report for further information.

## 1.9 Flood Alert areas and Flood Warning zones

Environment Agency Flood Alerts are used to warn people of the possibility of flooding and encourage them to be alert, stay vigilant and make early preparations. It is issued earlier than a flood warning, to give customers advice notice of the possibility of flooding, but before we are fully confident that flooding in Flood Warning Areas is expected.



Flood Warnings warn people of expected flooding and encourage them to take action to protect themselves and their property.

Some areas may be covered by more than one flood warning area as they may be at risk of flooding from more than one watercourse.

### 1.10 Depth, Velocity and Hazard to people

The Level 2 assessment seeks to map the probable depth and velocity of flooding as well as the hazard to people during the defended 100-year event. The 100-year flood event has been investigated in further detail because the Level 2 assessment helps inform the Exception Test and usually flood mitigation measures and access/ egress requirements focus on flood events lower than the 1,000-year event (e.g. the 100-year or 100-year plus climate change events). As part of a site-specific FRA, developers may need to undertake more detailed hydrological and hydraulic assessments of the watercourses to verify flood depth, velocity and hazard based on the relevant 100-year plus climate change event as part of a site-specific FRA, using the relevant climate change allowance based on the type of development and its associated vulnerability classification. Not all of this information is known at the strategic scale.

Hazard to people has been calculated using the below formula as suggested in Defra’s FD2321/TR2 “Flood Risk to People”.

---


$$HR = d \times (v + 0.5) + DF$$

Where, HR = (flood) hazard rating;

d = depth of flooding (m);

v = velocity of floodwaters (m/sec); and

DF = debris factor (= 1, conservative estimate of DF as largely urban area)

---

The different hazard categories are shown in Table 1-1.

Table 1-1 : Defra’s FD2321/TR2 “Flood Risks to People” classifications

Description of Flood Hazard Rating	Flood Hazard Rating	Classification Explanation
Very Low Hazard	< 0.75	Flood zone with shallow flowing water or deep standing water”
Danger for some (i.e. children)	0.75 - 1.25	“Danger: flood zone with deep or fast flowing water”
Danger for most	1.25 - 2.00	Danger: flood zone with deep fast flowing water”
Danger for all	>2.00	“Extreme danger: flood zone with deep fast flowing water”

---