<table>
<tr><td>  </td><td>Dorset Council<br><br>L2 SFRA - Detailed Site Summary Tables</td></tr>
<tr><td></td><td>Site details</td></tr>
<tr><td>Site Code</td><td>WEY8</td></tr>
<tr><td>Address</td><td>Lodmoor Gateway and Country Park, Weymouth</td></tr>
<tr><td>Area</td><td>32.6 hectares</td></tr>
<tr><td>Current land use</td><td>Country park, tourism/recreation, car park, recycling centre.</td></tr>
<tr><td>Proposed land use</td><td>Country park, tourism, low-key recreation and ancillary uses, recycling centre.</td></tr>
<tr><td></td><td>Sources of flood risk</td></tr>
<tr><td>Location of site within catchment</td><td>The site is located directly behind the sea wall and B3155 at the rear of Preston and Overcome Beach. It is less than 150m west of the culverted mouth of the Preston Brook (EA main river).</td></tr>
<tr><td>Existing drainage features</td><td>To the northeast the site borders a large marshland (the Lodmoor wetland bird reserve). Along most of this north eastern boundary this marsh is tidally influenced through the discharge culvert of the Preston Brook (an Environment Agency main river which enters the Lodmoor marsh from the east).<br>An ordinary watercourse flows from outside the northwest of the site and is joined approximately 100m inside the site boundary by another flowing north along the western boundary of the site. This discharges via a culvert with a tidal flap valve under the B3155 and beach to the sea at Preston Beach rock groyne – it is understood that the tidal flap has been propped open to allow tidal water to enter the southern section of the reserve. Seven surface water sewers drain upstream urban areas (to the west of the site) and discharge into this ordinary watercourse. This watercourse is extensively artificially aligned and passes through culverts within the site. Two small ponds are located within the tourist developments in the southeast of the site (Sea Life centre).</td></tr>
<tr><td>Joint probability assessment</td><td>All hydraulic modelling undertaken as part of this assessment has used a joint probability approach based on the Environment Agency best practice FD2308 guidance. This avoids overestimating the amount of flood risk when multiple sources of flooding are being considered in conjunction. Rather than running all combinations of conditions for each event, the models were run for tidal dominated (TDT) event, fluvial dominated (FDT) event. For example, in a 0.5% AEP TDT event, the tidal boundary has 0.5% AEP conditions, whereas the fluvial boundary has 33% AEP conditions. The tables below detail the event combinations that were simulated for the TDT and FDT events.
<table>
<tr><th>TDT Event AEP (%)</th><th>50</th><th>5</th><th>2.5</th><th>1.33</th><th>1</th><th>0.5</th><th>0.1</th></tr>
<tr><td>Tidal AEP (%)</td><td>50</td><td>5</td><td>2.5</td><td>1.33</td><td>1</td><td>0.5</td><td>0.1</td></tr>
<tr><td>Fluvial AEP (%)</td><td>1000</td><td>500</td><td>100</td><td>100</td><td>50</td><td>33</td><td>6</td></tr>
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</td></tr>
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# Dorset Council

# L2 SFRA - Detailed Site Summary Tables

## Site details

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| FDT Event AEP (%) | 50 | 10 | 5 | 2 | 1 | 0.5 | 0.1 |
|---|---|---|---|---|---|---|---|
| Tidal AEP (%) | MHWS | MHWS | MHWS | 100 | 50 | 33 | 6 |
| Fluvial AEP (%) | 50 | 10 | 5 | 2 | 1 | 0.5 | 0.1 |

For the surface water modelling a similar approach was taken when considering the downstream boundaries to avoid overestimating the extent of flood risk. As a result, for the 3.3% and 1% AEP events, the 50% AEP TDT and FDT boundary levels were applied to the model while the 5% AEP TDT and FDT levels were applied to the surface water model for the 0.1% AEP event.

**Fluvial dominated**

**Available data and mapping:**
A detailed coastal and fluvial TUFLOW model of Weymouth, developed for the Environment Agency in 2019 and updated as part of this Level 2 SFRA study has been used to describe the risk of fluvial flooding to the site.

WEY8 – Fluvial defended 3.3% AEP (depth)
WEY8 – Fluvial defended 1% AEP (depth)
WEY8 – Fluvial defended 0.1% AEP (depth)

WEY8 – Fluvial defended 3.3% AEP (hazard)
WEY8 – Fluvial defended 1% AEP (hazard)
WEY8 – Fluvial defended 0.1% AEP (hazard)

WEY8 – Fluvial defended 3.3% AEP (velocity)
WEY8 – Fluvial defended 1% AEP (velocity)
WEY8 – Fluvial defended 0.1% AEP (velocity)

**Data analysis:**

**3.3% AEP (1 in 30-year) event:**

Proportion - <1%

Max depth - 0m
Mean depth - 0m

Max velocity - 0m/s
Mean velocity - 0m/s

Max hazard - 0
Mean hazard - 0

**1% AEP (1 in 100-year) event:**

Proportion - <1%

Max depth - 0.08m
Mean depth - 0.03m

Max velocity - 0m/s
Mean velocity - 0m/s

Max hazard - 0.54
Mean hazard - 0.52

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| **Current land use** | Country park, tourism/recreation, car park, recycling centre. |
| **Proposed land use** | Country park, tourism, low-key recreation and ancillary uses, recycling centre. |
| | **0.1% AEP (1 in 1,000-year) event:**<br>Proportion - <1%<br>Max depth - 0.2m — Mean depth - 0.06m<br>Max velocity - 0.01m/s — Mean velocity - 0m/s<br>Max hazard - 0.72 — Mean hazard - 0.56<br><br>**Flood characteristics:**<br>Descriptions of depth, velocity and flood hazard ratings have not been included for the water within the narrow channel of the ordinary watercourse flowing through the site.<br><br>The site is shown not to be at risk of 1 in 30-year (3.3% AEP), 1 in 100-year (1% AEP), or 1 in 1,000-year (0.1%AEP) fluvially dominant combined fluvial and tidal flooding. |
| **Fluvial dominated plus climate change** | **Available data and mapping:**<br>A detailed coastal and fluvial TUFLOW model of Weymouth, developed for the Environment Agency in 2019 and updated as part of this Level 2 SFRA study has been used to describe the risk of fluvial flooding to the site. For the climate change scenarios, future defences, based on the specifications outlined within Appendix A and C of the Weymouth Harbour and Esplanade Flood and Coastal Risk Management Strategy (2020) were applied to the model based on interventions undertaken across all three phases. An Outline Business Case is currently being produced to assess the future coastal defences for Weymouth. When undertaking a Site-Specific Flood Risk Assessment, this should be considered.<br><br>WEY8 – Fluvial defended 3.3% AEP + 47% CC uplift Central allowance (depth)<br>WEY8 – Fluvial defended 1% AEP + 47% CC uplift Central allowance (depth)<br>WEY8 – Fluvial defended 0.1% AEP + 47% CC uplift Central allowance (depth)<br><br>WEY8 – Fluvial defended 3.3% AEP + 47% CC uplift Central allowance (hazard)<br>WEY8 – Fluvial defended 1% AEP + 47% CC uplift Central allowance (hazard)<br>WEY8 – Fluvial defended 0.1% AEP + 47% CC uplift Central allowance (hazard)<br><br>WEY8 – Fluvial defended 3.3% AEP + 47% CC uplift Central allowance (velocity)<br>WEY8 – Fluvial defended 1% AEP + 47% CC uplift Central allowance (velocity)<br>WEY8 – Fluvial defended 0.1% AEP + 47% CC uplift Central allowance (velocity)<br><br>**Data analysis:**<br>**3.3% AEP (1 in 30-year) event:**<br>Proportion - <1%<br>Max depth – 0.13m — Mean depth – 0.06m<br>Max velocity – 0m/s — Mean velocity – 0m/s<br>Max hazard – 0.56 — Mean hazard – 0.53<br>**1% AEP (1 in 100-year) event:**<br>Proportion - <1%<br>Max depth – 0.19m — Mean depth – 0.05m<br>Max velocity – 0.01m/s — Mean velocity – 0m/s<br>Max hazard – 0.71 — Mean hazard – 0.56 |

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| **Proposed land use** | Country park, tourism, low-key recreation and ancillary uses, recycling centre. |
| | **0.1% AEP (1 in 1,000-year) event:**<br>Proportion - <1%<br>Max depth – 0.9m — Mean depth – 0.2m<br>Max velocity – 0.47m/s — Mean velocity – 0.11m/s<br>Max hazard – 1.7 — Mean hazard – 0.74<br><br>**Flood characteristics:**<br>The results described below are based on the defences proposed as part of the Weymouth Harbour and Esplanade Flood and Coastal Risk Management Strategy (2020). An Outline Business Case is currently being prepared to assess the level of protection offered by the scheme. Any Site-Specific Flood Risk Assessment should consider the OBC once this is completed.<br><br>Descriptions of depth, velocity and flood hazard ratings have not been included for the water within the narrow channel of the ordinary watercourse flowing through the site.<br><br>The site is shown not to be at risk of flooding in a 1 in 30-year (3.3% AEP) event plus climate change, 1 in 100-year (1% AEP) event plus climate change or 1 in 1,000-year (0.1% AEP) event plus climate change. |
| **Surface Water (no downstream boundary)** | **Available data and mapping:**<br>The detailed InfoWorks ICM surface water model, developed for this Level 2 SFRA study has been used to describe the risk of surface water flooding to the site.<br><br>WEY8 – Surface water (no downstream boundary) 3.3% AEP (depth)<br>WEY8 – Surface water (no downstream boundary) 1% AEP (depth)<br>WEY8 – Surface water (no downstream boundary) 0.1% AEP (depth)<br><br>WEY8 – Surface water (no downstream boundary) 3.3% AEP (hazard)<br>WEY8 – Surface water (no downstream boundary) 1% AEP (hazard)<br>WEY8 – Surface water (no downstream boundary) 0.1% AEP (hazard)<br><br>WEY8 – Surface water (no downstream boundary) 3.3% AEP (velocity)<br>WEY8 – Surface water (no downstream boundary) 1% AEP (velocity)<br>WEY8 – Surface water (no downstream boundary) 0.1% AEP (velocity)<br><br>**Data analysis:**<br>**3.3% AEP (1 in 30-year) event:**<br>Proportion – 18%<br>Max depth – 0.86m — Mean depth – 0.11m<br>Max velocity – 0.48m/s — Mean velocity – 0.03m/s<br>Max hazard – 1.43 — Mean hazard – 0.62<br>**1% AEP (1 in 100-year) event:**<br>Proportion – 22%<br>Max depth – 0.98m — Mean depth – 0.13m<br>Max velocity – 0.48m/s — Mean velocity – 0.04m/s<br>Max hazard – 1.49 — Mean hazard – 0.65 |

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| **Proposed land use** | Country park, tourism, low-key recreation and ancillary uses, recycling centre. |
| | **0.1% AEP (1 in 1,000-year) event:**<br>Proportion – 30%<br>Max depth – 1.38m<br>Mean depth – 0.17m<br>Max velocity – 0.57m/s<br>Mean velocity – 0.05m/s<br>Max hazard – 1.7<br>Mean hazard – 0.7<br><br>**Flood characteristics:**<br>Descriptions of depth, velocity and flood hazard ratings have not been included for the water within the narrow channel of the ordinary watercourse flowing through the site.<br><br>In a 1 in 30-year (3.3% AEP) event surface water flooding is very fragmented across much of the site. Generally, depths are less than 0.1m but 0.1-0.2m in isolated areas. The coach and lorry park in the far southwest of the site has the greatest depths (0.1-0.4m). Velocities are less than 0.1m/s across the site except in the coach and lorry park in the far southwest of the site where velocities just exceed 0.1m/s. The flooded areas have a 'Low' (less than 0.75) flood hazard rating except for the southern edge of the coach and car park which has a 'Moderate' hazard (0.75 to 1.25) rating. The watercourses have a 'Moderate' hazard rating except for the section through the Sea Life centre which has a 'Significant' flood hazard rating (1.25 to 2.0).<br>In a 1 in 100-year (1% AEP) event the extent of flooding is very similar to the 1 in 30-year (3.3% AEP) event but increases slightly with an area flooding west of the confluence of the two watercourses in the northwest of the site. Depths are still less than 0.1m but 0.1-0.2m in isolated areas. The coach and lorry park has the greatest depths (0.1-0.6m), especially on the southern edge of the site. Velocities are less than 0.1m/s across the site except in the coach and lorry park where velocities reach 0.1-0.2m/s. The flooded areas have a 'Low' flood hazard rating except for the southern edge of the coach and car park which has areas of 'Moderate' and 'Significant' hazard ratings. There are also small areas of 'Moderate' hazard rating between the two watercourses in the northwest of the site and along the site boundary to the north of St John's Primary School. The watercourses have 'Moderate' and 'Significant' hazard ratings.<br>In a 1 in 1,000-year (0.1% AEP) event surface water flooding is still fragmented across much of the site but there are more areas with depths of 0.1-0.2m. The area between the two watercourses in the northwest of the site is almost entirely flooded to a maximum depth of 0.7m. Greatest depths (0.8m) occur along the southern edge of the coach and lorry park. Velocities are still less than 0.1m/s across much of the site except close to the watercourses (0.1-0.2m/s) and along the access road to the recycling centre (0.1-0.4m/s). In the car, coach and lorry park velocities reach 0.3m/s. The flooded areas have a 'Low' flood hazard rating except for the southern edge of the coach and car park which has areas of 'Moderate' and 'Significant' hazard ratings. There are also areas of 'Moderate' and 'Significant' hazard rating between the two watercourses in the northwest of the site and an area of 'Moderate' hazard rating along the site boundary to the north of St John's Primary School. The watercourses have a 'Significant' hazard rating. |
| **Surface water (no downstream boundary) plus climate change** | **Available data and mapping:**<br>The detailed InfoWorks ICM surface water model, developed for this Level 2 SFRA study has been used to describe the risk of surface water flooding to the site. For the climate change scenarios, future defences, based on the specifications outlined within Appendix A and C of the Weymouth Harbour and Esplanade Flood and Coastal Risk Management Strategy (2020) were applied to the model based on interventions undertaken across all three phases. An Outline Business Case is currently being produced to assess the future coastal defences for Weymouth. When undertaking a Site-Specific Flood Risk Assessment, this should be considered. |

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| | WEY8 – Surface water (no downstream boundary) 3.3% AEP + 40% CC (depth)<br>WEY8 – Surface water (no downstream boundary) 1% AEP + 45% CC (depth)<br>WEY8 – Surface water (no downstream boundary) 0.1% AEP + 45% CC (depth)<br><br>WEY8 – Surface water (no downstream boundary) 3.3% AEP + 40% CC (hazard)<br>WEY8 – Surface water (no downstream boundary) 1% AEP + 45% CC (hazard)<br>WEY8 – Surface water (no downstream boundary) 0.1% AEP + 45% CC (hazard)<br><br>WEY8 – Surface water (no downstream boundary) 3.3% AEP + 40% CC (velocity)<br>WEY8 – Surface water (no downstream boundary) 1% AEP + 45% CC (velocity)<br>WEY8 – Surface water (no downstream boundary) 0.1% AEP + 45% CC (velocity)<br><br>**Data analysis:**<br>**3.3% AEP (1 in 30-year) event:**<br>Proportion - 23%<br>Max depth - 1.02m — Mean depth - 0.14m<br>Max velocity - 0.49m/s — Mean velocity - 0.04m/s<br>Max hazard - 1.51 — Mean hazard - 0.66<br>**1% AEP (1 in 100-year) event:**<br>Proportion - 29%<br>Max depth - 1.31m — Mean depth - 0.17m<br>Max velocity - 0.56m/s — Mean velocity - 0.05m/s<br>Max hazard - 1.66 — Mean hazard - 0.69<br>**0.1% AEP (1 in 1,000-year) event:**<br>Proportion - 39%<br>Max depth - 1.46m — Mean depth - 0.19m<br>Max velocity - 0.61m/s — Mean velocity - 0.06m/s<br>Max hazard - 1.79 — Mean hazard - 0.72<br><br>**Flood characteristics:**<br>The results described below are based on the defences proposed as part of the Weymouth Harbour and Esplanade Flood and Coastal Risk Management Strategy (2020). An Outline Business Case is currently being prepared to assess the level of protection offered by the scheme. Any Site-Specific Flood Risk Assessment should consider the OBC once this is completed.<br><br>Descriptions of depth, velocity and flood hazard ratings have not been included for the water within the narrow channel of the ordinary watercourse flowing through the site.<br><br>In a 1 in 30-year (3.3% AEP) event plus 40% climate change uplift, surface water flooding is very similar to the 1 in 100-year (1% AEP) event. Flooding is widespread but largely fragmented. Depths are generally less than 0.1m but reach 0.3-0.4m in isolated areas. The southern edge of coach and lorry park has the greatest depths (0.7m). Velocities are less than 0.1m/s across the site except on the west end of the access road to the recycling centre (0.1-0.3m/s) and in the coach and lorry park (0.1-0.2m/s). The flooded areas have 'Low' (less than 0.75) flood hazard ratings except for the southern edge of the coach and car park which has areas of 'Moderate' (0.75 to 1.25) and |

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| | 'Significant' (1.25 to 2.0) hazard ratings. There are also small areas of 'Moderate' hazard rating between the two watercourses in the northwest of the site and along the site boundary to the north of St John's Primary School. The watercourses have 'Moderate' and 'Significant' hazard ratings.<br><br>In the 1 in 100-year (1% AEP) event plus 45% climate change uplift, surface water flooding increases slightly on the 3.3% AEP event plus 40% climate change uplift. Flooding is fragmented across much of the site but there are more areas with depths of 0.1-0.3m. The area between the two watercourses in the northwest of the site is almost entirely flooded to a maximum depth of 0.7m and depths reach 0.4m to the north of St John's Primary School. Greatest depths (0.8m) occur along the southern edge of the coach and lorry park. Velocities are still less than 0.1m/s across much of the site except along the access road to the recycling centre (0.1-0.4m/s). In the car and coach park velocities reach 0.3m/s. The flooded areas have a 'Low' flood hazard rating except for the southern edge of the coach and car park which has areas of 'Moderate' and 'Significant' hazard ratings. There are also areas of 'Moderate' and 'Significant' hazard rating between the two watercourses in the northwest of the site and an area of 'Moderate' hazard rating along the site boundary to the north of St John's Primary School. The watercourses have a 'Significant' hazard rating.<br><br>In the 1 in 1,000-year (0.1% AEP) event plus 45% climate change uplift, surface water flooding increases slightly in extent on the 1% AEP event plus 45% climate change uplift . Maximum depth increases to 1.1m in the coach and car park. Elsewhere, depths increase to a maximum of 0.8m in the area between the two watercourses in the northwest of the site and to 0.7m to the north of St John's Primary School. Velocities increase slightly to 0.5m/s on the access road to the recycling centre. The area of 'Significant' flood hazard rating expands with a substantial increase in the coach park and with an area to the north of St John's Primary School increasing to a 'Significant' rating. Areas of 'Moderate' hazard are to be found in the three main areas of the coach park, north of the primary school and between the two watercourses in the northwest of the site; elsewhere, flood hazard ratings remain 'Low'. |
| **Surface water (tidal dominated downstream boundary)** | **Available data and mapping:**<br>The detailed InfoWorks ICM surface water model, developed for this Level 2 SFRA study has been used to describe the risk of surface water flooding to the site.<br><br>WEY8 – Surface water (tidal downstream boundary) 3.3% AEP (depth)<br>WEY8 – Surface water (tidal downstream boundary) 1% AEP (depth)<br>WEY8 – Surface water (tidal downstream boundary) 0.1% AEP (depth)<br><br>WEY8 – Surface water (tidal downstream boundary) 3.3% AEP (hazard)<br>WEY8 – Surface water (tidal downstream boundary) 1% AEP (hazard)<br>WEY8 – Surface water (tidal downstream boundary) 0.1% AEP (hazard)<br><br>WEY8 – Surface water (tidal downstream boundary) 3.3% AEP (velocity)<br>WEY8 – Surface water (tidal downstream boundary) 1% AEP (velocity)<br>WEY8 – Surface water (tidal downstream boundary) 0.1% AEP (velocity) |

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| | **Data analysis:**<br>**3.3% AEP (1 in 30-year) event:**<br>Proportion - 18%<br>Max depth - 0.85m — Mean depth - 0.11m<br>Max velocity - 0.48m/s — Mean velocity - 0.03m/s<br>Max hazard - 1.43 — Mean hazard - 0.62<br>**1% AEP (1 in 100-year) event:**<br>Proportion - 22%<br>Max depth - 0.98m — Mean depth - 0.13m<br>Max velocity - 0.48m/s — Mean velocity - 0.04m/s<br>Max hazard - 1.49 — Mean hazard - 0.65<br>**0.1% AEP (1 in 1,000-year) event:**<br>Proportion - 31%<br>Max depth - 1.38m — Mean depth - 0.17m<br>Max velocity - 0.57m/s — Mean velocity - 0.05m/s<br>Max hazard - 1.7 — Mean hazard - 0.7<br><br>**Flood characteristics:**<br>Descriptions of depth, velocity and flood hazard ratings have not been included for the water within the narrow channel of the ordinary watercourse flowing through the site.<br><br>In a 1 in 30-year (3.3% AEP) event, surface water flooding is very fragmented across much of the site. Generally, depths are less than 0.1m but reach 0.1-0.2m in isolated areas. The coach and lorry park in the far southwest of the site has the greatest depths (0.1-0.4m). Velocities are less than 0.1m/s across the site except in the coach and lorry park in the far southwest of the site (0.1-0.2m/s). The flooded areas have a flood hazard rating of 'Low' hazard (less than 0.75) except for the southern edge of the coach and car park which has a 'Moderate' hazard (0.75 to 1.25) rating.<br><br>In a 1 in 100-year (1% AEP) event the extent of flooding is very similar to the 1 in 30-year (3.3% AEP) event but increases slightly with an area flooding west of the confluence of the two watercourses in the northwest of the site. Depths are generally still less than 0.1m but reach 0.1-0.2m in isolated areas. The coach and lorry park has the greatest depths (0.1-0.6m), especially on the southern edge of the site. Velocities are less than 0.1m/s across the site except in the coach and lorry park where velocities reach 0.1-0.2m/s. The flooded areas have a 'Low' flood hazard rating except for the southern edge of the coach and car park which has areas of 'Moderate' and 'Significant' (1.25 to 2.0) hazard ratings.<br><br>In a 1 in 1,000-year (0.1% AEP) event surface water flooding is still fragmented across much of the site with some areas with depths of 0.1-0.3m. The area between the two watercourses in the northwest of the site is almost entirely flooded to a maximum depth of 0.7m. There is a linear area of flooding to the north and east of St John's Primary School, running from within the site and along the site boundary. Greatest depths (0.8m) occur along the southern edge of the coach and lorry park. Velocities are still less than 0.1m/s across much of the site except close to the watercourses (0.1-0.2m/s) and along the access road to the recycling centre (0.1-0.4m/s). In the car, coach and lorry park velocities reach 0.3m/s. The flooded areas have a 'Low' flood hazard rating except for the southern edge of the coach and car park which has areas |

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| **Proposed land use** | Country park, tourism, low-key recreation and ancillary uses, recycling centre. |
| | of 'Moderate' and 'Significant' hazard ratings. There are also areas of 'Moderate' and 'Significant' hazard rating between the two watercourses in the northwest of the site and an area of 'Moderate' hazard rating along the site boundary to the north of the primary school. |
| **Surface water (tidal dominated downstream boundary) plus climate change** | **Available data and mapping:**<br>The detailed InfoWorks ICM surface water model, developed for this Level 2 SFRA study has been used to describe the risk of surface water flooding to the site. For the climate change scenarios, future defences, based on the specifications outlined within Appendix A and C of the Weymouth Harbour and Esplanade Flood and Coastal Risk Management Strategy (2020) were applied to the model based on interventions undertaken across all three phases. An Outline Business Case is currently being produced to assess the future coastal defences for Weymouth. When undertaking a Site-Specific Flood Risk Assessment, this should be considered.<br><br>WEY8 – Surface water (tidal downstream boundary) 3.3% AEP + 40% CC (depth)<br>WEY8 – Surface water (tidal downstream boundary) 1% AEP + 45% CC (depth)<br>WEY8 – Surface water (tidal downstream boundary) 0.1% AEP + 45% CC (depth)<br><br>WEY8 – Surface water (tidal downstream boundary) 3.3% AEP + 40% CC (hazard)<br>WEY8 – Surface water (tidal downstream boundary) 1% AEP + 45% CC (hazard)<br>WEY8 – Surface water (tidal downstream boundary) 0.1% AEP + 45% CC (hazard)<br><br>WEY8 – Surface water (tidal downstream boundary) 3.3% AEP + 40% CC (velocity)<br>WEY8 – Surface water (tidal downstream boundary) 1% AEP + 45% CC (velocity)<br>WEY8 – Surface water (tidal downstream boundary) 0.1% AEP + 45% CC (velocity)<br><br>**Data analysis:**<br>**3.3% AEP (1 in 30-year) event:**<br>Proportion - 24%<br>Max depth - 1.02m Mean depth - 0.13m<br>Max velocity - 0.49m/s Mean velocity - 0.04m/s<br>Max hazard - 1.51 Mean hazard - 0.66<br>**1% AEP (1 in 100-year) event:**<br>Proportion - 30%<br>Max depth - 1.31m Mean depth - 0.16m<br>Max velocity - 0.56m/s Mean velocity - 0.05m/s<br>Max hazard - 1.66 Mean hazard - 0.69<br>**0.1% AEP (1 in 1000-year) event:**<br>Proportion - 39%<br>Max depth - 1.46m Mean depth - 0.19m<br>Max velocity - 0.61m/s Mean velocity - 0.06m/s<br>Max hazard - 1.79 Mean hazard - 0.72<br><br>**Flood characteristics:**<br>The results described below are based on the defences proposed as part of the Weymouth Harbour and Esplanade Flood and Coastal Risk Management Strategy (2020). An Outline Business Case is currently being prepared to assess the level of |

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| | **Dorset Council**<br><br>**L2 SFRA - Detailed Site Summary Tables** |
| | **Site details** |
| **Site Code** | **WEY8** |
| **Address** | Lodmoor Gateway and Country Park, Weymouth |
| **Area** | 32.6 hectares |
| **Current land use** | Country park, tourism/recreation, car park, recycling centre. |
| **Proposed land use** | Country park, tourism, low-key recreation and ancillary uses, recycling centre. |
| | protection offered by the scheme. Any Site-Specific Flood Risk Assessment should consider the OBC once this is completed.<br><br>Descriptions of depth, velocity and flood hazard ratings have not been included for the water within the narrow channel of the ordinary watercourse flowing through the site.<br><br>In a 1 in 30-year (3.3% AEP) event plus 40% climate change uplift, surface water extents are similar to the 1 in 30-year (3.3% AEP) event. Flooding is very fragmented across much of the site, except for areas of flooding west of the confluence of the two watercourses in the northwest of the site and in the coach and lorry park in the southwest of the site. Generally, depths are less than 0.1m but reach 0.1-0.2m in isolated areas. The coach and lorry park has the greatest depths (0.1-0.7m), especially on the southern edge of the site, depths reach 0.4m between the two watercourses in the northwest and to the north of the primary school. Velocities are less than 0.1m/s across the site except in the coach and lorry park where velocities reach 0.1-0.2m/s and on the northwest end of the access road to the recycling centre (0.1-0.3m/s). The flooded areas have a 'Low' (less than 0.75) flood hazard rating except for the southern edge of the coach and car park which has areas of 'Moderate' (0.75 to 1.25) and 'Significant' (1.25 to 2.0) hazard ratings. There are also areas of 'Moderate' hazard rating between the two watercourses in the northwest of the site and along the site boundary to the north of the primary school.<br><br>In the 1 in 100-year (1% AEP) event plus 45% climate change uplift, surface water flooding is slightly greater than the 1 in 30-year (3.3% AEP) event plus 40% climate change uplift. Flooding is still very fragmented across much of the site. Depths increase slightly to 0.8m in the coach park and to 0.6m between the two watercourses in the northwest. Velocities are less than 0.1m/s across the site except in the coach park where velocities reach 0.2m/s and on the northwest end of the access road to the recycling centre (0.1-0.4m/s). Flood hazard ratings remain very similar to the 3.3% AEP event plus 40% climate change uplift.<br><br>In the 1 in 1,000-year (0.1% AEP) event plus 45% climate change uplift, surface water flooding extents increase on the 1% AEP event plus 45% climate change uplift across much of the site, but this is largely focussed on the coach park, the area between the watercourses in the northwest and the area to the north of the primary school. Depths increase to 1.0m in the coach park, 0.8m in the northwest and 0.7m to the north of the primary school. In isolated areas across the site depths reach 0.4m. Velocities increase slightly to 0.3m/s in the coach park and to 0.2m/s between the watercourses in the northwest but elsewhere remain similar to the 1% AEP event plus 45% climate change uplift. The area of 'Significant' flood hazard rating expands with a substantial increase in the coach park and with areas to the north of St John's Primary School and between the two watercourses in the northwest increasing to a 'Significant' rating. Areas of 'Moderate' hazard are to be found in the three main flooded areas, elsewhere flood hazard ratings remain 'Low'. |
| **Surface water (fluvial dominated downstream boundary)** | **Available data and mapping:**<br>The detailed InfoWorks ICM surface water model, developed for this Level 2 SFRA study has been used to describe the risk of surface water flooding to the site.<br><br>WEY8 – Surface water (fluvial downstream boundary) 3.3% AEP (depth)<br>WEY8 – Surface water (fluvial downstream boundary) 1% AEP (depth)<br>WEY8 – Surface water (fluvial downstream boundary) 0.1% AEP (depth) |

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| | **Dorset Council**<br><br>**L2 SFRA - Detailed Site Summary Tables** |
| | **Site details** |
| **Site Code** | **WEY8** |
| **Address** | Lodmoor Gateway and Country Park, Weymouth |
| **Area** | 32.6 hectares |
| **Current land use** | Country park, tourism/recreation, car park, recycling centre. |
| **Proposed land use** | Country park, tourism, low-key recreation and ancillary uses, recycling centre. |
| | WEY8 – Surface water (fluvial downstream boundary) 3.3% AEP (hazard)<br>WEY8 – Surface water (fluvial downstream boundary) 1% AEP (hazard)<br>WEY8 – Surface water (fluvial downstream boundary) 0.1% AEP (hazard)<br><br>WEY8 – Surface water (fluvial downstream boundary) 3.3% AEP (velocity)<br>WEY8 – Surface water (fluvial downstream boundary) 1% AEP (velocity)<br>WEY8 – Surface water (fluvial downstream boundary) 0.1% AEP (velocity)<br><br>**Data analysis:**<br>**3.3% AEP (1 in 30-year) event:**<br>Proportion – 18%<br>Max depth – 0.86m Mean depth – 0.11m<br>Max velocity – 0.48m/s Mean velocity – 0.03m/s<br>Max hazard – 1.43 Mean hazard – 0.62<br>**1% AEP (1 in 100-year) event:**<br>Proportion – 22%<br>Max depth – 0.98m Mean depth – 0.13m<br>Max velocity – 0.48m/s Mean velocity – 0.04m/s<br>Max hazard – 1.49 Mean hazard – 0.65<br>**0.1% AEP (1 in 1,000-year) event:**<br>Proportion – 30%<br>Max depth – 1.38m Mean depth – 0.17m<br>Max velocity – 0.57m/s Mean velocity – 0.05m/s<br>Max hazard – 1.7 Mean hazard – 0.7<br><br>**Flood characteristics:**<br>Descriptions of depth, velocity and flood hazard ratings have not been included for the water within the narrow channel of the ordinary watercourse flowing through the site.<br><br>In a 1 in 30-year (3.3% AEP) event surface water flooding is very fragmented across much of the site. Generally, depths are less than 0.1m but 0.1-0.2m in isolated areas. The coach and lorry park in the far southwest of the site has the greatest depths (0.1-0.5m). Velocities are less than 0.1m/s across the site except the west end of the access road to the recycling centre (0.2m/s) and in the coach and lorry park in the far southwest of the site where velocities just exceed 0.1m/s. The flooded areas have a flood hazard rating of 'Low' hazard (less than 0.75) except for the southern edge of the coach and car park which has a 'Moderate' hazard (0.75 to 1.25) rating. The watercourses have a 'Moderate' hazard rating except for the section through the Sea Life centre which has a 'Significant' flood hazard rating (1.25 to 2.0).<br><br>In a 1 in 100-year (1% AEP) event the extent of flooding is very similar to the 1 in 30-year (3.3% AEP) event but increases slightly with an area flooding west of the confluence of the two watercourses in the northwest of the site. Depths are still less than 0.1m but 0.1-0.2m in isolated areas. The coach and lorry park has the greatest depths (0.1-0.6m), especially on the southern edge of the site. Velocities are less than 0.1m/s across the site except the west end of the access road to the recycling centre (0.3m/s) and in the coach and lorry park where velocities reach 0.1-0.2m/s. The flooded areas have a 'Low' flood hazard rating except for the southern edge of the coach and car park which has areas of 'Moderate' and 'Significant' (1.25 to 2.0) flood |

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| | **Dorset Council**<br><br>**L2 SFRA - Detailed Site Summary Tables** |
| | **Site details** |
| **Site Code** | **WEY8** |
| **Address** | Lodmoor Gateway and Country Park, Weymouth |
| **Area** | 32.6 hectares |
| **Current land use** | Country park, tourism/recreation, car park, recycling centre. |
| **Proposed land use** | Country park, tourism, low-key recreation and ancillary uses, recycling centre. |
| | hazard ratings. There are also small areas of 'Moderate' hazard rating between the two watercourses in the northwest of the site and along the site boundary to the north of St John's Primary School. The watercourses have 'Moderate' and 'Significant' hazard ratings.<br><br>In a 1 in 1,000-year (0.1% AEP) event surface water flooding is still fragmented across much of the site but extent and depth increases, there are more areas with depths of 0.1-0.2m. The area between the two watercourses in the northwest of the site is almost entirely flooded to a maximum depth of 0.7m. Greatest depths (0.8m) occur along the southern edge of the coach and lorry park. Velocities are still less than 0.1m/s across much of the site except close to the watercourses (0.1-0.2m/s) and along the west end of the access road to the recycling centre (0.1-0.4m/s). In the car, coach and lorry park velocities reach 0.3m/s. The flooded areas have a 'Low' flood hazard rating except for the southern edge of the coach and car park which has areas of 'Moderate' and 'Significant' hazard ratings. There are also areas of 'Moderate' and 'Significant' hazard rating between the two watercourses in the northwest of the site and an area of 'Moderate' hazard rating along the site boundary to the north of St John's Primary School. The watercourses have a 'Significant' hazard rating. |
| **Surface water (fluvial dominated downstream boundary) plus climate change** | **Available data and mapping:**<br>The detailed InfoWorks ICM surface water model, developed for this Level 2 SFRA study has been used to describe the risk of surface water flooding to the site. For the climate change scenarios, future defences, based on the specifications outlined within Appendix A and C of the Weymouth Harbour and Esplanade Flood and Coastal Risk Management Strategy (2020) were applied to the model based on interventions undertaken across all three phases. An Outline Business Case is currently being produced to assess the future coastal defences for Weymouth. When undertaking a Site-Specific Flood Risk Assessment, this should be considered.<br><br>WEY8 – Surface water (fluvial downstream boundary) 3.3% AEP + 40% CC (depth)<br>WEY8 – Surface water (fluvial downstream boundary) 1% AEP + 45% CC (depth)<br>WEY8 – Surface water (fluvial downstream boundary) 0.1% AEP + 45% CC (depth)<br><br>WEY8 – Surface water (fluvial downstream boundary) 3.3% AEP + 40% CC (hazard)<br>WEY8 – Surface water (fluvial downstream boundary) 1% AEP + 45% CC (hazard)<br>WEY8 – Surface water (fluvial downstream boundary) 0.1% AEP + 45% CC (hazard)<br><br>WEY8 – Surface water (fluvial downstream boundary) 3.3% AEP + 40% CC (velocity)<br>WEY8 – Surface water (fluvial downstream boundary) 1% AEP + 45% CC (velocity)<br>WEY8 – Surface water (fluvial downstream boundary) 0.1% AEP + 45% CC (velocity)<br><br>**Data analysis:**<br>**3.3% AEP (1 in 30-year) event:**<br>Proportion - 24%<br>Max depth - 1.02m<br>Mean depth - 0.13m<br>Max velocity - 0.49m/s<br>Mean velocity - 0.04m/s<br>Max hazard - 1.51<br>Mean hazard - 0.66 |

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| | **Dorset Council**<br><br>**L2 SFRA - Detailed Site Summary Tables** |
| | **Site details** |
| **Site Code** | **WEY8** |
| **Address** | Lodmoor Gateway and Country Park, Weymouth |
| **Area** | 32.6 hectares |
| **Current land use** | Country park, tourism/recreation, car park, recycling centre. |
| **Proposed land use** | Country park, tourism, low-key recreation and ancillary uses, recycling centre. |
| | **1% AEP (1 in 100-year) event:**<br>Proportion - 30%<br>Max depth - 1.31m — Mean depth - 0.16m<br>Max velocity - 0.56m/s — Mean velocity - 0.05m/s<br>Max hazard - 1.66 — Mean hazard - 0.69<br>**0.1% AEP (1 in 1000-year) event:**<br>Proportion - 39%<br>Max depth - 1.46m — Mean depth - 0.19m<br>Max velocity - 0.61m/s — Mean velocity - 0.06m/s<br>Max hazard - 1.79 — Mean hazard - 0.72<br><br>**Flood characteristics:**<br>The results described below are based on the defences proposed as part of the Weymouth Harbour and Esplanade Flood and Coastal Risk Management Strategy (2020). An Outline Business Case is currently being prepared to assess the level of protection offered by the scheme. Any Site-Specific Flood Risk Assessment should consider the OBC once this is completed.<br><br>Descriptions of depth, velocity and flood hazard ratings have not been included for the water within the narrow channel of the ordinary watercourse flowing through the site.<br><br>In a 1 in 30-year (3.3% AEP) event plus 40% climate change uplift, surface water flooding is fragmented across much of the site but is largely focussed on the coach park, the area between the watercourses in the northwest and the area to the north of St John's primary school. Depths are generally less than 0.1m but 0.1-0.3m in isolated areas. The southern edge of the coach park has the greatest depths (0.6m), depths reach 0.4m north of the primary school and between the watercourses. Velocities are less than 0.1m/s across the site except the west end of the access road to the recycling centre (0.3m/s) and in the coach park where velocities reach 0.2m/s. The flooded areas have a 'Low' (less than 0.75) flood hazard rating except for the southern edge of the coach park which has areas of 'Moderate' (0.75 to 1.25) and 'Significant' (1.25 to 2.0) flood hazard ratings. There are also small areas of 'Moderate' hazard rating between the two watercourses in the northwest of the site and along the site boundary to the north of St John's Primary School. The watercourses have 'Moderate' and 'Significant' hazard ratings.<br><br>In the 1 in 100-year (1% AEP) event plus 45% climate change uplift, surface water flooding is very similar to the 1 in 30-year (3.3% AEP) event plus 40% uplift with climate change. Depths increase to 0.8m on the southern edge of the coach park and 0.6m between the two watercourses in the northwest of the site. Velocities remain very similar to the 3.3% AEP event plus 40% uplift. Flood hazard ratings remain similar with small increases in the extent of the areas of 'Moderate' and 'Significant' flood hazard ratings on the southern edge of the coach park. An area of 'Significant' hazard rating is now found between the two watercourses in the northwest of the site and the area of 'Moderate' hazard rating increases along the site boundary to the north of St John's Primary School. The watercourses have a 'Significant' hazard rating.<br><br>In the 1 in 1,000-year (0.1% AEP) event plus 45% climate change uplift, there is a general increase in surface water flooding extents across the site on the 1% AEP event plus 45% climate change uplift. These increases are largely focussed on the previous larger areas of inundation but there is still much fragmented flooding across the site. |

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| | **Dorset Council**<br><br>**L2 SFRA - Detailed Site Summary Tables** |
| | **Site details** |
| **Site Code** | **WEY8** |
| **Address** | Lodmoor Gateway and Country Park, Weymouth |
| **Area** | 32.6 hectares |
| **Current land use** | Country park, tourism/recreation, car park, recycling centre. |
| **Proposed land use** | Country park, tourism, low-key recreation and ancillary uses, recycling centre. |
| | Depths increase to 1.0m on the southern edge of the coach park, 0.8m between the two watercourses in the northwest of the site and 0.6 north of the primary school. Velocities show a small increase reaching 0.5m/s on the access road to the recycling centre, and 0.2m/s north of the primary school and between the two watercourses in the northwest of the site. Flood hazard ratings show a general small increase on the 1% AEP event plus 45% climate change uplift, with the area to the north of the primary school now having a 'Significant' rating. |
| **Tidal dominated** | **Available data and mapping:**<br>A detailed coastal and fluvial TUFLOW model of Weymouth, developed for the Environment Agency in 2019 and updated as part of this Level 2 SFRA study has been used to describe the risk of fluvial flooding to the site.<br><br>WEY8 – Tidal defended 3.3% AEP (depth)<br>WEY8 – Tidal defended 0.5% AEP (depth)<br>WEY8 – Tidal defended 0.1% AEP (depth)<br><br>WEY8 – Tidal defended 3.3% AEP (hazard)<br>WEY8 – Tidal defended 0.5% AEP (hazard)<br>WEY8 – Tidal defended 0.1% AEP (hazard)<br><br>WEY8 – Tidal defended 3.3% AEP (velocity)<br>WEY8 – Tidal defended 0.5% AEP (velocity)<br>WEY8 – Tidal defended 0.1% AEP (velocity)<br><br>**Data analysis:**<br>**3.3% AEP (1 in 30-year) event:**<br>Proportion – 9%<br>Max depth – 1.3m; Mean depth – 0.47m<br>Max velocity – 2.17m/s; Mean velocity – 0.25m/s<br>Max hazard – 2.8; Mean hazard – 1.11<br>**0.5% AEP (1 in 200-year) event:**<br>Proportion – 12%<br>Max depth – 1.72m; Mean depth – 0.59m<br>Max velocity – 2.29m/s; Mean velocity – 0.32m/s<br>Max hazard – 3.26; Mean hazard – 1.28<br>**0.1% AEP (1 in 1,000-year) event:**<br>Proportion – 17%<br>Max depth – 2.02m; Mean depth – 0.63m<br>Max velocity – 2.44m/s; Mean velocity – 0.32m/s<br>Max hazard – 3.9; Mean hazard – 1.34<br><br>**Flood characteristics:**<br>Descriptions of depth, velocity and flood hazard ratings have not been included for the water within the narrow channel of the ordinary watercourse flowing through the site.<br><br>In a 1 in 30-year (3.3% AEP) event, generally flooding is confined to the ordinary watercourse. Flooding also covers the B3155 and skatepark and in the north west of |

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| | **Dorset Council**<br><br>**L2 SFRA - Detailed Site Summary Tables** |
| | **Site details** |
| **Site Code** | **WEY8** |
| **Address** | Lodmoor Gateway and Country Park, Weymouth |
| **Area** | 32.6 hectares |
| **Current land use** | Country park, tourism/recreation, car park, recycling centre. |
| **Proposed land use** | Country park, tourism, low-key recreation and ancillary uses, recycling centre. |
| | the site an area near its confluence with a ditch to the east of Moorside Avenue is inundated to a maximum depth of 0.8m. Depth is 0.4m at the skate park. Out of the watercourse, velocities are generally less than 0.4m/s close to the B3155 but reach 1.2m/s within the skate park. Along the channel of the ordinary watercourse velocities reach a maximum of 1.8m/s near its culvert under the B3155. Flood hazard ratings are 'Low' (less than 0.75) and 'Moderate' (0.75 to 1.25) in the zone close to the B3155, although there is a narrow strip of 'Significant' (1.25 to 2.0) along the roadside ditch north east of the skate park. The flood hazard rating along the channel of the ordinary watercourse is 'Significant' and includes some of the flooded area in the north west of the site, near Moorside Avenue, but the rest of this area is rated 'Moderate' and 'Low'.<br><br>In a 1 in 200-year (0.5% AEP) event, flood extents increase very slightly on the 3.3% AEP event. The southeast section of the site close to the B3155 has depths up to 0.6m (excluding the drainage ditch). Water is confined to a narrow area within 10m of the channelled area of the ordinary watercourse through most of the site but in the north west of the site the area east of Moorside Avenue floods to depths of 0.3-1.0m. Velocities are less than 0.2m/s outside of the channelled areas, except in the skatepark (1.0m/s). Along the ordinary watercourse velocities are 0.3-2.1m/s. Much of the flooded area of the site's southeast has a flood hazard rating of 'Significant' and 'Moderate'. To the northeast of the skatepark the channel has an 'Extreme' (greater than 2.0) rating extending about halfway along its length. The flooded area east of Moorside Avenue mostly has a 'Significant' rating.<br><br>In a 1 in 1,000-year (0.1% AEP) event, flood extents increase slightly from the 1% AEP event. The southeast section of the site has depths up to 0.8m (excluding the drainage ditch) and water covers more of the area around the Sea Life Centre. The flooded area in the northwest of the site has depths up to 1.2m. The flooded area extends approximately 20m to the southwest of the channel throughout the central section of the site with depths of 0.3-0.7m. Velocities outside of the main channel in the southeast of the site are 0.1-0.3m/s, rising to 1.1m/s in the flow through the skatepark. Along the main channel velocities are 0.3-2.3m/s. Much of the flooded area of the site has a flood hazard rating of 'Significant' with almost all of the watercourse having a rating of 'Extreme'. Areas flooded within the Sea Life Centre section of the site have a 'Moderate' or 'Low' flood hazard rating.<br><br>Flood water enters the site from the south east along the B3155. It breaches defences and floods along the Esplanade south of the Preston Beach rock groyne. From here it floods onto the B3155 and enters the site via the ordinary watercourse that flows through the site; it also flows north east along the B3155, entering the site through the skate park and the beach car park access road, reaching depths of 0.3m on the B3155. These ingress points all lead water into the ordinary watercourse flowing through the Sealife centre leading further into the site. |
| **Tidal dominated plus climate change** | **Available data and mapping:**<br>A detailed coastal and fluvial TUFLOW model of Weymouth, developed for the Environment Agency in 2019 and updated as part of this Level 2 SFRA study has been used to describe the risk of fluvial flooding to the site. For the climate change scenarios, future defences, based on the specifications outlined within Appendix A and C of the Weymouth Harbour and Esplanade Flood and Coastal Risk Management Strategy (2020) were applied to the model based on interventions undertaken across all three phases. An Outline Business Case is currently being produced to assess the future coastal defences for Weymouth. When undertaking a Site-Specific Flood Risk Assessment, this should be considered. |

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| | **Dorset Council**<br><br>**L2 SFRA - Detailed Site Summary Tables** |
| | **Site details** |
| **Site Code** | **WEY8** |
| **Address** | Lodmoor Gateway and Country Park, Weymouth |
| **Area** | 32.6 hectares |
| **Current land use** | Country park, tourism/recreation, car park, recycling centre. |
| **Proposed land use** | Country park, tourism, low-key recreation and ancillary uses, recycling centre. |
| | WEY8 – Tidal defended 3.3% AEP + 1.71mCC uplift Upper end allowance (depth)<br>WEY8 – Tidal defended 0.5% AEP + 1.71m CC uplift Upper end allowance (depth)<br>WEY8 – Tidal defended 0.1% AEP + 1.71m CC uplift Upper end allowance (depth)<br><br>WEY8 – Tidal defended 3.3% AEP + 1.71m CC uplift Upper end allowance (hazard)<br>WEY8 – Tidal defended 0.5% AEP + 1.71m CC uplift Upper end allowance (hazard)<br>WEY8 – Tidal defended 0.1% AEP + 1.71m CC uplift Upper end allowance (hazard)<br><br>WEY8 – Tidal defended 3.3% AEP + 1.71m CC uplift Upper end allowance (velocity)<br>WEY8 – Tidal defended 0.5% AEP + 1.71m CC uplift Upper end allowance (velocity)<br>WEY8 – Tidal defended 0.1% AEP + 1.71m CC uplift Upper end allowance (velocity)<br><br>**Data analysis:**<br>**3.3% AEP (1 in 30-year) event:**<br>Proportion - 75%<br>Max depth - 4.11m Mean depth - 1.96m<br>Max velocity - 2.75m/s Mean velocity - 0.27m/s<br>Max hazard - 5.48 Mean hazard - 2.01<br>**0.5% AEP (1 in 200-year) event:**<br>Proportion - 91%<br>Max depth - 5.22m Mean depth - 2.63m<br>Max velocity - 3.88m/s Mean velocity - 0.27m/s<br>Max hazard - 5.85 Mean hazard - 2.39<br>**0.1% AEP (1 in 1,000-year) event:**<br>Proportion - 92%<br>Max depth - 5.37m Mean depth - 2.73m<br>Max velocity - 3.33m/s Mean velocity - 0.29m/s<br>Max hazard - 6.35 Mean hazard - 2.5<br><br>**Flood characteristics:**<br>The results described below are based on the defences proposed as part of the Weymouth Harbour and Esplanade Flood and Coastal Risk Management Strategy (2020). An Outline Business Case is currently being prepared to assess the level of protection offered by the scheme. Any Site-Specific Flood Risk Assessment should consider the OBC once this is completed.<br><br>Descriptions of depth, velocity and flood hazard ratings have not been included for the water within the narrow channel of the ordinary watercourse flowing through the site.<br><br>Most of the site would be inundated in a 1 in 30-year (3.3% AEP) event plus climate change, with much of this area being flooded to depths of 1.5-3.0m (maximum depth 3.5m in the coach park and 3.8m between the two ordinary watercourses in the northwest of the site). The area free from flooding is to the north east of the ordinary watercourse flowing through the site, however the seaward end of this zone and recycling centre access road is flooded in this event. Velocities across much of the site are 0.1-0.5m/s, rising to 0.6-2.4m/s along many of the ditches and the ordinary watercourse channel and up to 1.5m/s in areas in the car park in the south west of the site. All of the site to the south and west of the ordinary watercourse has a flood |

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| | **Dorset Council**<br><br>**L2 SFRA - Detailed Site Summary Tables** |
| | **Site details** |
| **Site Code** | **WEY8** |
| **Address** | Lodmoor Gateway and Country Park, Weymouth |
| **Area** | 32.6 hectares |
| **Current land use** | Country park, tourism/recreation, car park, recycling centre. |
| **Proposed land use** | Country park, tourism, low-key recreation and ancillary uses, recycling centre. |
| | hazard rating of 'Extreme' (greater than 2.0) or 'Significant' (1.25 to 2.0). Most of the access road to the recycling centre also has a flood hazard rating of 'Extreme'.<br><br>In a 1 in 200-year (0.5% AEP) event plus climate change, the only areas not flooded are the far north of the site and parts of a zone leading southeast from this to include localised areas around the recycling facilities. Depths increase across much of south west half of the site to more than 2.3m. Velocities across much of the site are very similar to the 1 in 30-year (3.3% AEP) event plus climate change, the area to the northeast of the watercourse mostly has velocities of less than 0.2m/s. Almost the entire site to the south and west of the ordinary watercourse has a flood hazard rating of 'Extreme' (greater than 2.0). To the north and east of the watercourse most of the area has a 'Significant' (1.25 to 2.0) rating.<br><br>In a 1 in 1,000-year (0.1% AEP) event plus climate change, flooding is very similar to the 0.5% AEP tidal event plus climate change. The flood free area is restricted to the far north of the site and the banks around the recycling facilities. Depths increase across much of the site to more than 2.6m, in many locations to over 3.0m, including the access to the recycling centre. Velocities across much of the south west half of the site increase slightly on the 1 in 200-year (0.5% AEP) event plus climate change to 0.3-0.5m/s. Flood hazard ratings increase slightly.<br><br>Flood waters enter the site from near Preston Beach rock groyne and from the Esplanade to the south. Water enters the main area of the site along the south eastern boundary with the main flows being through the skatepark, Sea Life Centre and beach car park access road into the ordinary watercourse. In the south west, there is a flow route from the Esplanade into the site at Olympia Apartments and towards the leisure centre. The flow inland along the ordinary watercourse floods the western section of the site, following its feeder ditch that leads from the south. The area to the north east of the watercourse floods after the area to its southwest, the water coming from both the ordinary watercourse and from the marshland to the northeast. |
| **Reservoir** | No risk of flooding from reservoir breaches has been identified within or around the vicinity of this site. |
| **Groundwater** | The JBA Groundwater Flood Map, at 5m resolution, shows that the entirety of this site is within the 'No risk' zone, deeming it as having a negligible risk from groundwater flooding during a 1% AEP groundwater flood event due to the nature of the local geology deposits.<br><br>This assessment does not negate the requirement that an appropriate assessment of the groundwater regime should be carried out at the site-specific FRA stage. |
| **Flood history** | Recorded Flood Outlines – Environment Agency: There are no recorded incidences of tidal or fluvial flooding occurring in or around the surrounding area of the site.<br><br>Historic Flood Risk – Dorset Council (LLFA): areas around Lodmoor carpark, near the Sea Life Centre have flooded in the past during high tides where surface water sewer systems are restricted due to tidal locking of the ordinary watercourse draining the site. In the far northwest of the site, areas east of Moorside Avenue and Weymouth Bay Avenue are reported to have flooded in the past but were not formally investigated. |
| | **Flood risk management infrastructure** |
| **Defences – present day** | Just beyond the south-eastern boundary of the site:<br><br>ID: 65675, Type: Promenade providing coastal protection, Current Standard of Protection: 1 in 5-year (20% AEP), Condition: Not provided, Asset owner: Unknown, |

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| | **Dorset Council**<br><br>**L2 SFRA - Detailed Site Summary Tables** |
| | **Site details** |
| **Site Code** | **WEY8** |
| **Address** | Lodmoor Gateway and Country Park, Weymouth |
| **Area** | 32.6 hectares |
| **Current land use** | Country park, tourism/recreation, car park, recycling centre. |
| **Proposed land use** | Country park, tourism, low-key recreation and ancillary uses, recycling centre. |
| | Asset maintainer: Private individual, Company or Charity (extending for a further 1.5km to the southwest).<br><br>ID: 38526, Type: Beach providing coastal protection, Design Standard of Protection: 1 in 200-year (0.5% AEP), Condition: 3 (Fair), Asset owner: Environment Agency, Asset maintainer: Environment Agency (extending for a further 1.4km to the northeast). |
| **Defences – proposed** | The wall along the back of the beach will be raised to 5.4m AOD from Greenhill Gardens (to the south west of the site) to Overcombe (to the north west of the site).<br><br>The Outline Business Case and Weymouth Harbour and Esplanade Flood and Coastal Risk Management Strategy (2020) should be consulted to provide an understanding of the land which will need to be safeguarded against future development to enable the construction of these defences. |
| **Residual risk** | The modelled breach is located at 'Lodmoor Nature', approximately 300m north east of the site boundary.<br><br>Baseline in this context refers to the equivalent percentage AEP present day or climate change tidal flooding event without a breach.<br><br>In a 1 in 30-year (3.3% AEP) event, there is no increase on baseline (no breach) flooding extent, depth, velocity or hazard within the site. Flooding is still confined to the ordinary watercourse and B3155 areas.<br><br>In a 1 in 200-year (0.5% AEP) event, there are very minor increases on baseline flooding extent, depth, velocity and hazard ratings. These occur on and just inland of the B3155 and along the edges of the ordinary watercourse.<br><br>In a 1 in 30-year (3.3% AEP) event with climate change and future defences, there are very slight decreases in flooding extents and depths compared to the baseline. Velocities increase very slightly in the east of the site and more significantly in the vicinity of the Premier Inn to a localised maximum of 2.5m/s. Flood hazard ratings remain very similar to the baseline, with a small decrease in the extent of the 'Extreme' hazard (greater than 2.0) rating to the southwest of the ordinary watercourse.<br><br>In a 1 in 200-year (0.5% AEP) event with climate change and future defences, there are decreases on baseline flooding depth of approximately 1.0m; extent also decreases. There is a decrease in the area of 'Extreme' hazard rating in the south and west of the site. |
| | **Emergency planning** |
| **Flood warning** | Parts of the site (along the B3155 around Sea Life Centre and extending inland to Moorside Close) are located in the Environment Agency Flood Warning Area 111FWCECD022 "Dorset coast at Preston Beach" providing flood warnings for the English Channel.<br><br>Similar areas of the site are located in the Environment Agency Flood Alert Area 111WACECD "East coast of Dorset" which provides flood alerts for the English Channel. |
| **Access and egress** | The current main vehicular access and egress to the site is via the B3155 running along the southeast edge of the site. Access and egress to the coach park in the south west of the site is via Melcombe Avenue which is 100m inland from the B3155 but also connects to the B3159 (Dorchester Road) further inland. It may be possible to provide access to the northwest of the site via Weymouth Bay Avenue or Grove Avenue , both of which have good access to the B3159 (Dorchester Road) further inland. |

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| **Site Code** | **WEY8** |
| **Address** | Lodmoor Gateway and Country Park, Weymouth |
| **Area** | 32.6 hectares |
| **Current land use** | Country park, tourism/recreation, car park, recycling centre. |
| **Proposed land use** | Country park, tourism, low-key recreation and ancillary uses, recycling centre. |
| | Access and egress are not affected by fluvial flooding.<br><br>During surface water flooding events, the B3155 is affected least of these access options, but this still has areas of 'Low' flood hazard rating in both the 1% AEP and 0.1% AEP events plus climate change. Access and egress via the coach park in the southwest is likely to be affected by a 'Significant' flood hazard rating close to the entrance in the 0.1% AEP event.<br><br>Tidal flooding affects much of the site in all modelled events, with flooding entering from the B3155 preventing access and egress via this route (depths exceeding 0.5m in a 1 in 200-year (0.5% AEP) event, increasing with return period). This means that access and egress from further from the coast is likely to be required, however ditches along the north western boundary of the site create narrow zones of 'Significant' flood hazard which would need to be overcome if access and egress were to be possible via the Weymouth Bay Avenue or Grove Avenue routes. Access is possible via the coach park entrance in the 0.1% AEP event. All tidal flooding events with climate change significantly inundate the south western half of the site.<br><br>During present day tidally dominant flooding, safe access and egress is not possible by pedestrians or vehicles along the B3155 in the 0.5% AEP event.<br><br>For detailed information on safe access and egress, please see the hazard maps. |
| | **Requirements for drainage control and impact mitigation** |
| **Broadscale assessment of possible SuDS** | Geology at the site (from BGS 625K mapping) consists of:<br>• Superficial deposits: alluvium (clay, silt and sand) underlies the whole of the site, except for a small area at the far northern edge.<br>• Bedrock: Kellaways formation and Oxford Clay formation (undifferentiated) (mudstone, siltstone and sandstone) underlie the whole of the site.<br><br>Topography – there are no steep slopes within the site.<br><br>Groundwater levels – not shown to be at risk from groundwater.<br><br>Surface water flood risk – in a 1 in 100-year (1% AEP) event plus 45 years' climate change flooding is widely distributed over the site but much of this is at depths of less than 0.1m, except along the drainage ditches and watercourses.<br><br>The site is not located within a Groundwater Source Protection Zone and there are no restrictions over the use of infiltration techniques with regard to groundwater quality.<br><br>The site has areas within its boundary designated by the Environment Agency as being a historic landfill site. A thorough ground investigation will be required as part of a detailed site-specific FRA, to determine potential mitigation for contamination and the impact this may have on SuDS. As such, proposed SuDS should be discussed with the relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints.<br><br>BGS data indicates that the underlying geology is likely to have highly variable permeability. Therefore, this should be confirmed through infiltration testing. Off-site discharge in accordance with the SuDS hierarchy may be required to discharge surface water runoff from the site.<br><br>The site is not considered to be susceptible to groundwater flooding, due to the nature of the local geological conditions. This should be confirmed through additional site investigation work. Below ground development such as basements may still be |

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| **Current land use** | Country park, tourism/recreation, car park, recycling centre. |
| **Proposed land use** | Country park, tourism, low-key recreation and ancillary uses, recycling centre. |
| | susceptible to groundwater flooding and due to the proximity of the site to the coast, groundwater may be impacted by sea water ingress.<br><br>Proposed attenuation features such as basins, ponds and tanks should be located outside of Flood Zone 2 or 3 to avoid the potential risks to the hydraulic capacity or structural integrity of these features. Surface water outfalls that discharge into Weymouth Harbour may be susceptible to surcharging/tide locking due to water levels in Weymouth Harbour. The impacts of tide locking/flood flows will need to be considered in terms of the attenuation storage requirements of the site and placement of the outfalls.<br><br>Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, amenity and biodiversity. This could provide wider sustainability benefits to the site. Proposals to use SuDS techniques should be discussed with relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints.<br><br>Development at this site should not increase flood risk either on or off site. The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development.<br><br>Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered. Consideration should be made to the existing condition of receiving waterbodies and their Water Framework Directive objectives for water quality. The use of multistage SuDS treatment will clean improve water quality of surface water runoff discharged from the site and reduce the impact on receiving water bodies.<br><br>Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.<br><br>The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should be located on common land or public open space to facilitate ease of access.<br><br>Surface water discharge rates should not exceed the existing greenfield runoff rates for the site. Opportunities to further reduce discharge rates should be considered and agreed with the LLFA. It may be possible to reduce site runoff by maximising the permeable surfaces on site using a combination of permeable surfacing and soft landscaping techniques.<br><br>Surface water flood mapping indicates the presence of surface water flow paths during the 1% AEP event. Existing flow paths should be retained and integrated with blue-green infrastructure and public open space.<br><br>If it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity of the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner. |
| **Opportunities for wider sustainability benefits and integrated flood risk management** | • Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, amenity and biodiversity. This could provide wider sustainability benefits to the site. Proposals to use SuDS techniques should be discussed with relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints. |

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| | **NPPF and planning implications** |
| **Exception Test requirements**<br><br>**(LA considerations)** | The Local Authority will need to confirm that the sequential test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied.<br><br>Parts of the site lie within Flood Zone 3a and 3b, therefore, dependent on the proposed land use, the Exception Test is required for the site (see table 2 of the Planning Practice Guidance for further details).<br>The Exception Test is needed if:<br>• 'More Vulnerable' and 'Essential Infrastructure' development is located within Flood Zone 3a and 'Highly Vulnerable' development is located within Flood Zone 2.<br>• 'Highly Vulnerable' infrastructure should not be permitted within Flood Zone 3a and Flood Zone 3b.<br>• 'More Vulnerable' and 'Less Vulnerable' infrastructure should not be permitted within Flood Zone 3b.<br>• The site is located in an area at high risk of surface water flooding.<br><br>The development of a Local Adaptation and Resilience plan for Weymouth is recommended, considering the updated PPG, development of Nature Recovery Networks, requirements for Biodiversity net gain in development and to demonstrate that the development and use of land in the local planning authority's area contribute to the mitigation of, and adaptation to, climate change.<br><br>To satisfy the exception test, development of this site would need to be compliant with the findings of the Local Adaptation and Resilience Plan.<br><br>Land that needs to be safeguarded against future development to enable the construction of the proposed flood defences will be identified within the Outline Business Case. |
| **Requirements and guidance for site-specific Flood Risk Assessment**<br><br>**(Developer considerations)** | **Flood Risk Assessment:**<br>• At the planning application stage, a site-specific Flood Risk Assessment will be required for this site as it lies within Flood Zones 2, 3a and 3b, is at increased flood risk in future and exceeds one hectare in size.<br>• All sources of flooding, particularly the risk of tidal, fluvial and surface water flooding should be considered as part of a site-specific flood risk assessment.<br>• Development type and design should be carefully considered, residential development should be avoided on this site as it is considered 'More Vulnerable' infrastructure, unless appropriate arrangements can be put in place to secure safe access and egress, or emergency plan provisions address matters affecting vulnerability of residents.<br>• The site should be considered for 'Less Vulnerable' or 'Water Compatible Development' in the south east of the site and the area around the un-named watercourse which bisects the site as these areas lie within Flood Zone 3.<br>• The site-specific FRA should be carried out in line with the National Planning Policy Framework; Flood Risk and Coastal Change Planning Practice Guidance.<br>• Consultation with the Local Authority and the Lead Local Flood Authority (both being Dorset Council) should be undertaken at an early stage. |

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| **Area** | 32.6 hectares |
| **Current land use** | Country park, tourism/recreation, car park, recycling centre. |
| **Proposed land use** | Country park, tourism, low-key recreation and ancillary uses, recycling centre. |
| | • The Outline Business Case for the future flood defences should be consulted to understand what land is safeguarded against future development to support the construction of the defences.<br><br>**Guidance for site design and making development safe:**<br><br>• The developer will need to show, through an FRA, that future users of the development will not be placed in danger from flood hazards throughout its lifetime. It is for the applicant to show that the development meets the objectives of the NPPF's policy on flood risk. For example, how the operation of any mitigation measures can be safeguarded and maintained effectively through the lifetime of the development. (Para 048 Flood Risk and Coastal Change PPG).<br>• Arrangements for safe access and egress will need to be provided during the design flood event (defined as river or surface water flooding likely to occur with a 1% annual flood probability plus an appropriate allowance for climate change or tidal flooding with a 0.5% annual flood probability plus an appropriate allowance for climate change). The depth, velocity and hazard outputs can be used to support this. Designs and access and egress arrangements will need to incorporate measures so development and occupants are safe.<br>• Provisions for safe access and egress must not impact on surface water flow routes or contribute to loss of floodplain storage. Consideration should be given to the siting of access points with respect to areas of surface water flood risk. Due to the significant flood risk posed to the site, a site-specific flood risk assessment may need to show that appropriate evacuation procedures and flood response infrastructure are in place to manage the residual risk associated with an extreme flood event.<br>• Flood resilience and resistance measures should be implemented wherever appropriate during the construction phase, e.g. use of boundary walls and raising of floor levels to a minimum of whichever is higher of 300mm above the:<br>  ○ average ground level of the site;<br>  ○ adjacent road level to the building;<br>  ○ estimated design flood level.<br>• Flood resilience measures should be tested to ensure they do not increase flood risk elsewhere.<br>• The risk from surface water flow routes should be quantified as part of a site- specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure there is no increase in runoff beyond current greenfield rates.<br>• Developers should seek to discharge surface water at existing greenfield rates. Opportunities to further reduce discharge rates should be considered and agreed with the LLFA. It may be possible to reduce site runoff by maximising the permeable surfaces on site using a combination of permeable surfacing and soft landscaping techniques.<br>• Developers should refer to: Dorset Level 1 SFRA, Dorset Level 2 SFRA, Dorset Council's National and Local List of Requirements for Planning Applications. |