**Stage 1: Desktop Review**

### 1.1 Flood History
(include review of Floodmaps.ie)

**General Area**
Moneycashen is a small settlement area along the coast at the mouth of the River Cashen. The estuary at this location is several hundred metres wide, although it narrows to the west at the entrance to the Shannon.

**Flood event records**
There are 2 flood records one recurring and one singular for the same areas. The flood events are associated with the Cashen Seawall.

> “Cashen village on the L6038 at the mouth of the Cashen River is flooded 2 to 3 times annually. The cause is the sea wall being overtopped by high tide, wind and waves. 3/4 houses are flooded and road is impassable. OPW is responsible for the sea defences or part of them.”

### 1.2 Relevant information on flooding issues from OPW and LA staff

**PFRA database comments (in italics):**

**OPW comments**
Predictive < 150 - History: 1 dated flood with 12 properties reported as flooding - No Strong LA Support as APSR

**LA comments**
Risk of tidal flooding at Moneycashen Village

**Meeting / discussion summary comments:**

**OPW comments**
- A lot of sediment deposition in this area. Local residents are calling for increased dredging activities to help alleviate flooding. However, this is not considered to be an appropriate measure.
- Flood mechanism is tidal. There is a surface water issue when water overtopping the defences can get trapped, however, this is still a tidal issue.
- Need to determine why water is being trapped.
- This flooding occurs at the properties and road at the western edge of Moneycashen.
- There may be a small/low gap in the defences near this location.

**LA comments**
- Flooding problem is linked to road flooding perhaps once a year, most likely to be due to surface water flows flowing north and getting trapped behind the flood defence wall.
### 1.4 PFRA Data

#### 1.4.1 PFRA hazard mapping
- PFRA mapping available in GIS layer: Yes □ No ✗
- PFRA mapping included on FRR map: Yes □ No ✗

#### 1.4.2 Summary of Principal Receptors

<table>
<thead>
<tr>
<th>Type</th>
<th>FRI score (if available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receptors not considered as part of the PFRA process.</td>
<td></td>
</tr>
<tr>
<td>FRI score not calculated in PFRA</td>
<td></td>
</tr>
</tbody>
</table>

### 1.7 Stage 1 Evaluation

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Clearly APSR</th>
<th>Uncertain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood History (1.1)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>OPW / LA Information (1.2)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>PFRA Evaluation (1.4)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Overall Desktop Evaluation (if any above aspect is uncertain then overall designation is uncertain)</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

### 1.8 Proposed level of assessment for Stage 2 site visits

<table>
<thead>
<tr>
<th>Level A Site Visit</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level B Site Visit</td>
<td></td>
</tr>
</tbody>
</table>
## Stage 2: Site Inspection

### Level A Assessment

| Date and Time of Inspection | Date: 13/05/11  
Time: 14:00 |
|-----------------------------|-------------------------|
| Names of inspection team (including OPW/LA staff if present) | Mathieu Valois  
Kelly Kasperczyk |

### 2.1 Ground-truthing of Hazard Mapping

<table>
<thead>
<tr>
<th>Receptor Type</th>
<th>Location description (if not obvious)</th>
<th>Exists?</th>
<th>Overall Vulnerability / Risk (L / M / H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fishing business/assets</td>
<td>At pier</td>
<td>Y</td>
<td>High</td>
</tr>
<tr>
<td>Local road</td>
<td></td>
<td>Y</td>
<td>High</td>
</tr>
<tr>
<td>Houses</td>
<td></td>
<td>Y</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

Coastal mapping was not available at time of the review.

### 2.2 Spot check ground-truthing of selected receptor vulnerability

(Also note any key receptors noted during visit that are not identified by PFRA)

- Nurse at Riverside Nursing Home, Abbeydorney (lives in Moneycashen)
  - Waves overtop the seawall and water cannot return to the river as debris blocks the drains.
  - Properties at extreme end of sea wall are prone to flood; properties east of these don’t really flood. Houses further east – water reaches up onto the grass at the front of these properties.
  - Water also damages roads (pot holes).
  - Photos of the flood waters are available.

### 2.3 Local knowledge - on-site comments

(OPW, LA and any info volunteered by local residents during visit)

No hydraulic restrictions noted. Not relevant to this area being considered for coastal flood risk.

### 2.4 Comments on hydraulic constrictions (bridges, etc.) and conveyance routes

- No hydraulic restrictions noted. Not relevant to this area being considered for coastal flood risk.
### 2.5 SVRS Assessment Matrix

**Weightings:**
- A - $x_1$ - reasonable expectation of flooding
- B - $x_2$ - high expectation of flooding or flooding is tidal (any risk)
- C - $x_5$ - risk to life

<table>
<thead>
<tr>
<th>Approx. Number</th>
<th>1 to 4</th>
<th>5 to 20</th>
<th>&gt;20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighting</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>Property (domestic)</td>
<td>10</td>
<td>100</td>
<td>X</td>
</tr>
<tr>
<td>Property (small retail or business)</td>
<td>20</td>
<td>X</td>
<td>200</td>
</tr>
<tr>
<td>Property (large retail or business)</td>
<td>50</td>
<td>500</td>
<td>1000</td>
</tr>
<tr>
<td>Road or Rail Infrastructure</td>
<td>30</td>
<td>X</td>
<td>300</td>
</tr>
<tr>
<td>Critical Infrastructure (local) [hospital, school, police/fire/ambulance station, substation, WTW/WWTW, gov bldg, other (specify)]</td>
<td>50</td>
<td>500</td>
<td>1000</td>
</tr>
<tr>
<td>Critical Infrastructure (national importance)</td>
<td>250</td>
<td>1000</td>
<td>2000</td>
</tr>
<tr>
<td>Cultural Heritage Site</td>
<td>20</td>
<td>200</td>
<td>400</td>
</tr>
<tr>
<td>Environmental Designated Site</td>
<td>20</td>
<td>200</td>
<td>400</td>
</tr>
<tr>
<td>Hazardous Substances Site</td>
<td>50</td>
<td>500</td>
<td>1000</td>
</tr>
<tr>
<td>Total SVRS</td>
<td>300</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2.6 Defence Assets

#### Formal and Informal Flood Defence Assets (include effective and ineffective assets to inform asset survey and potential mitigation measures)

- Open Channel Watercourses
  - Man-made river channel
  - Flood relief channel
  - Canal
  - Mill leat
  - Drainage channels / back drains

- Bridges and Culvert crossings
  - Single Arch bridge
  - Multi-Arch bridge
  - Single Span bridge
  - Multi-Span bridge
  - Box culvert(s)
  - Pipe culvert(s)
  - Arch Culvert(s)
  - Irregular Culvert(s)

- Culverted Watercourses (culvert length is greater than just a crossing)
  - Box culvert(s)
  - Pipe culvert(s)
  - Arch Culvert(s)
  - Irregular Culvert(s)

- Walls and Embankments
  - Embankment(s)
  - Raised wall(s)
  - Retaining wall(s)

- Control Structures – weirs, gates, dams
  - Fixed crest weir
  - Adjustable weir
  - Dam / Barrage
  - Sluice gates
  - Lock gates
  - Radial gates

- Storage
  - On-line storage (natural)
  - On-line storage (artificial)
  - Off-line storage
### Outfalls
- Flapped outfall(s) into watercourse
- Unflapped outfall(s) into watercourse
  - *i.e. from smaller watercourses, drains etc. into river / estuary / sea*
- Tidal flap(s)
- Tidal sluice(s)
  - *i.e. from main watercourse into estuary / sea*

### Other
- Pumping Station
- Erosion Protection
- Sand Dunes

### Additional notes (if required):
Sea wall starts at Knoppoge junction at the sand dunes and extends west to the pier where there is a gap providing access to fishing pots/traps stored here. Gap is approx 3m long. The sea wall then extends towards the second last house to the west.

### 2.8 Initial Potential Mitigation Measures

#### Non-structural measures
- Planning and Development control
- Sustainable Urban Drainage Systems
- Flood forecasting / warning
- Change in Operating Procedures for water level control:
- Public awareness campaign
- Individual property protection
- Land use management

#### Structural measures
- **Strategic development management for floodplain development:**
  - (integration of measures into strategic development proposals)
- **Storage:**
  - On-line
  - Off-line
- **Flow diversion:**
  - Flood relief channel
  - Flood relief culvert
- **Increase conveyance:**
  - Bridge works
  - Channel works
  - Floodplain
- **Flood defences:**
  - Walls
  - Embankments
- **Localised works:**
  - Defence raising
  - In-fill gaps
  - Trash screen
- **Maintenance works:**
  - Culvert / channel clearance
  - Asset maintenance
- **Relocation of properties:**
- **Improve existing defences:**
  - (describe)
- **Other (describe):**
  - Improve surface water drainage system to alleviate trapped water after wave overtopping, allowing water to drain through the sea wall.
  - The gap in the defences at the west end (approx. 3m) is required for fishing related activities. Could consider a gate or removable flood boards / stoplogs at this location to avoid interfering with fishing / quay activities.

### Outcomes

<table>
<thead>
<tr>
<th>PFRA Designation</th>
<th>APSR</th>
<th>not an APSR</th>
<th>IRR</th>
<th>FRI Score: N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Ground-truthing of PFRA Assessment (hazard mapping and receptors)</td>
<td>High Confidence (good)</td>
<td>Uncertain</td>
<td>Low Confidence (poor)</td>
<td>Not available</td>
</tr>
<tr>
<td>Site Visit Review Score</td>
<td>300</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended Designation</td>
<td>APSR</td>
<td>not an APSR</td>
<td>IRR</td>
<td></td>
</tr>
</tbody>
</table>
| Summary Comments (if required) | The combination of:
• the presence of the sea wall;
• overtopping of the wall
• water becoming trapped behind the defences
• properties becoming isolated when the road is flooded, and
• sea level rise
suggest that this location is potentially at significant risk of flooding, and this is only likely to get worse with climate change related impacts – primarily sea level rise and increased storminess.
It is concluded that this location should be designated as an APSR. |
**Photo 1:** Sea wall protecting properties from wave overtopping

**Photo 2:** Gap in the seawall defence

**Photo 3:** Location of potential road flooding at Cloghane

**Photo 4:** Looking west, start of elevated properties behind the sea wall
Photo 5: Sea wall height, properties higher in the background

Photo 6: Looking west the road runs along the length of the sea wall near Knoppoge. This road has previously flooded as water becomes trapped behind the sea wall.
The PFRA Flood Extents shown are indicative. They have been developed using simple and cost-effective methods that are suitable for the PFRA. They should not be used for local decision-making or any other purpose without verification.