Skerries Stormwater Measures and SUDS Proposals

Assessment of Potential Stormwater Management and SUDS Measures for Skerries

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Table of Contents

1.0 Introduction

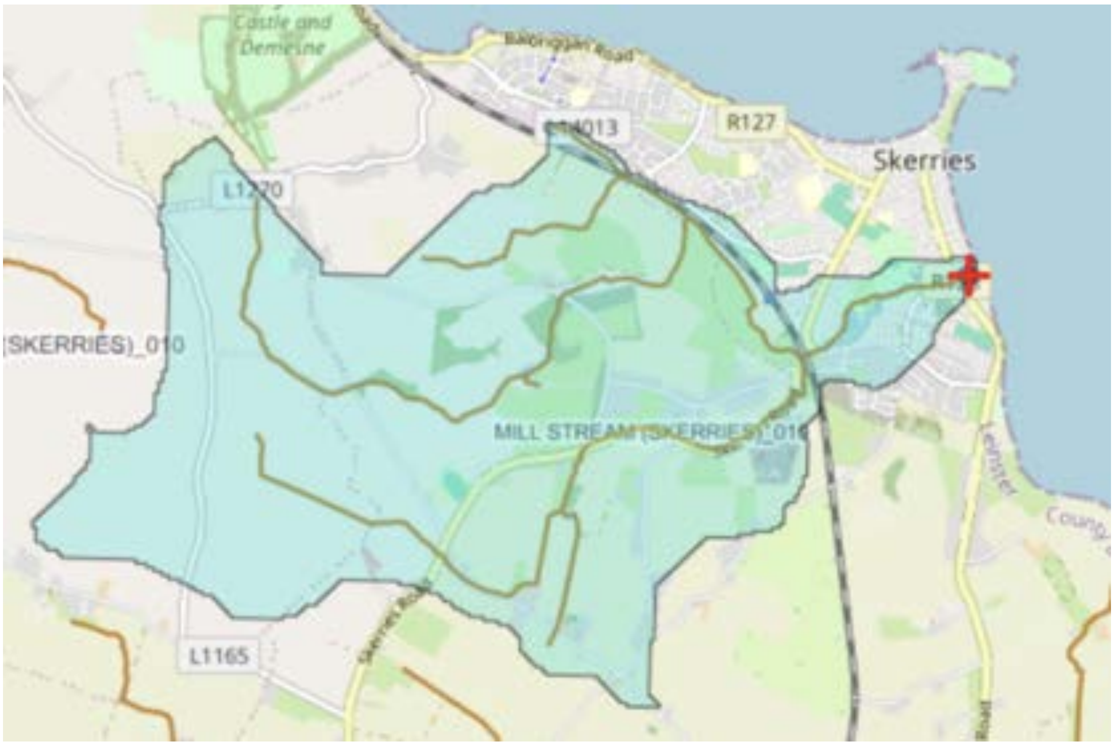
Both Skerries Tidy Towns and Sustainable Skerries approached FH Wetland Systems in the winter of 2023 to explore opportunities for implementing river related habitat measures, in the case of Skerries Tidy Towns and Sustained Urban Drainage Systems (SUDS) and other measures for reducing the impact that the town may have on the river, in the case of Sustainable Skerries. As part of this process members of each local group met with Féidhlim Harty of FH Wetland Systems in April 2024 to assess the potential for improvements for both the stream habitat and for urban runoff.

This report is intended as an overview of the ideas and suggestions that may be of interest to the local community for further action.

1.1 Site Location and Catchment Overview

The town of Skerries is located at the lower reaches of the Mill Stream, which played an historic part in the development of the settlement here. The Mill Stream is a small watercourse which has a catchment size of only *c*. 5km in length and 8.2km^2 as shown in the EPA map below. This small catchment size makes for it comparatively easy to organise a full catchment protection plan and improvement measures for water quality and habitat enhancement, simply by virtue of the reduced number of land owners along the watercourse.

Skerries Village (shown as red cross) within the Mill Stream Catchment. (Source www.catchments.ie)



1.2 Mill Stream Water Quality

Waterway quality in Ireland is typically based on Q-values, or a biological assessment of a watercourse, specifically the number and diversity of a suite of macroinvertebrates (insects and other similar aquatic fauna). By this system of assessment, Q1 is classed as bad and Q5 is classed as high. Q-value assessments offer a picture of the habitat value of a river or stream and thus a good overview of general water quality over an extended time period. These are typically shown as coloured dots on the EPA maps, but as we can see there are no assessment points on the Mill Stream in the map above. Thus we can look to the colour used for the stream itself on the map.

The colour of the river channel shows the overall river quality status (in this instance, orange, or Q2), which takes into account the macroinvertebrate Q-value analysis, where available, as well as physical and chemical lab analysis and the overall hydromorphology of the waterbody (the shape and structure of the river and the degree of engineered interference over the decades or centuries). Where no Q-value assessments exist, such as in this instance, the designation also relies on the land-use of the wider catchments and on the experience of other waterways in nearby catchments.

Ireland has an obligation under the Water Framework Directive to achieve good (Q4; green) status for all rivers by 2027; an obligation that we are can achieve only with miraculous shifts in priorities for both urban and agricultural water management. In this light, all measures, large and small, that can help with improving the water quality in the river are highly recommended, and the proposed SUDS measures, in-stream habitat enhancement and wider catchment-scale measures in this report can be part of the overall set of solutions available.

1.3 Flood Map Information

Based on discussions with the local groups involved in commissioning this report, The Mill Stream is prone to flooding pressure within the lower catchment. Such flooding may be a function of stream flow or tidal influence or both. Almost inevitably flooding is most problematic in the lower reaches of catchments, the point where all of the tributaries ultimately feed towards. This is not only where the natural flood plains in an undisturbed river system would be present, but also where houses and businesses are located. This incompatibility makes for challenges throughout the world, where the needs of waterways have often been ignored in our development of urban environments.

What SUDS, Nature Based Solutions and catchment protection measures endeavour to do is to address some of these flood challenges both within the urban environment and within the wider catchment area to limit flooding, as well as helping to restore water quality and aquatic habitat.

The current flood map assessment for the Mill Stream is shown on https://www.floodinfo.ie/map/floodmaps as being under review and as such does not provide any past flood information on the map. This may change over the course of the coming months, so updates should be easy to check for on the OPW mapping tool linked here. Page 90 of this document references Skerries: https://www.fingal.ie/sites/default/files/2023-04/Strategic%20Flood%20Risk%20Assessment%20SFRA_pg%201-110.pdf

Local reports suggest that while the flooding is problematic for the local homeowners impacted, it is relatively modest in scope, restricted to a relatively small number of houses along both the Mill Stream below Kybe Pond and the nearby seafront itself.

1.4 Sewage treatment at Skerries

Skerries sewage treatment system is shown by the blue dot in the map below; with the outfall location indicated on the red dot *c*. 2km north the North Strand. Assessing the impact of the sewage outfall on the coast is beyond the scope of this report, but it is relatively safe to suggest that it is not without impact.

However what is within the remit of this study is to explain that any SUDS system implemented in Skerries that helps to keep stormwater out of the foul sewers will inevitably help to improve the overall functioning of the main sewage treatment system and thus improve protection of the coast. In urban areas, the ideal is to keep stormwater separate from foul sewage, but in older areas there is often some degree of combination of stormwater into foul sewer pipes.

Skerries Sewage Treatment System (blue dot) and outfall location (red dot). (Source www.catchments.ie)

The more that the stormwater can be excluded, for example by using rain gardens, stormwater wetlands or even raised planters, the less pressure is placed on the overall sewer infrastructure during heavy rainfall events. This is one of the reasons why beach closure notices occur after heavy rainfall near urban areas; and one of the reasons why seemingly simple SUDS systems can be very effective at protecting the local environment from not only hydrological impacts and stormwater pollution, but also from sewage pollution. The storm surge overflow simply diverts the contents of the toilets straight out to an emergency discharge point rather than overloading the sewage treatment system (which would be worse).

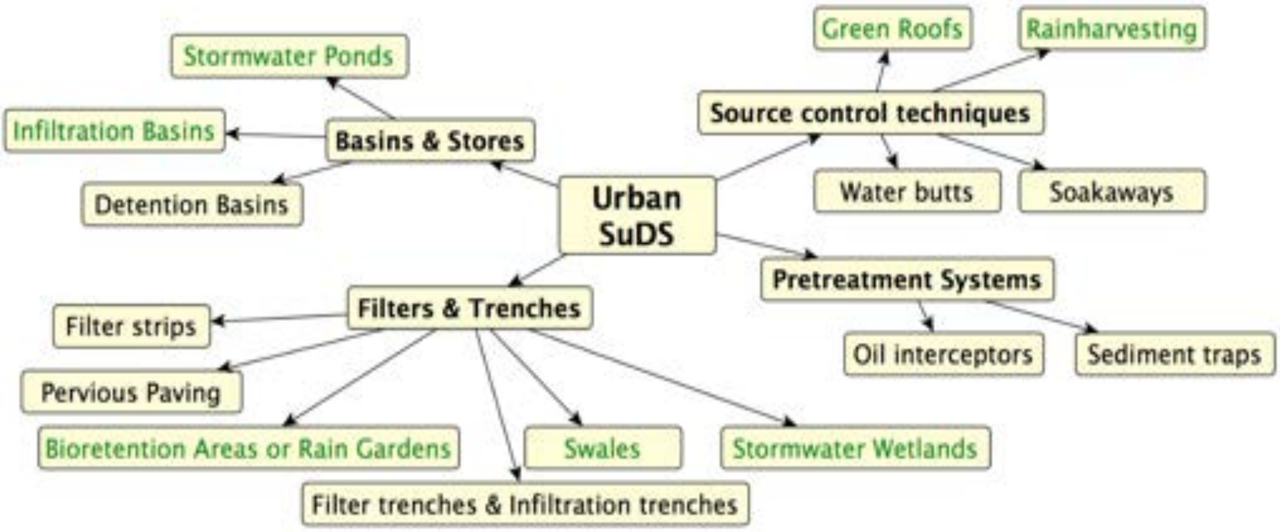
One of the things that is worth noting on the map on the previous page is that the sewage system is located at the head of a tributary of the Mill Stream. I suggest that it is more likely that the stream may have been an historical storm surge overflow route, but that now the excess is pumped or piped to sea instead of being routed to the stream. However it may be worth following this up with FCC or Irish Water to confirm.

For an interesting historical perspective on the Skerries sewage system the Tide and Time book from the Skerries Historical Society is worth a read.

2.0 SUDS Measures Summary

The water flowing from paved surfaces is termed stormwater. Sustained Urban Drainage Systems (SUDS) or Sustainable Drainage Systems (SuDS) are techniques or technologies that are used to protect waterways from silt, nutrients or other contaminants in stormwater. SUDS were developed as a design solution in an urban context to help prevent flooding downstream of new developments or existing urban areas. SUDS are designed specifically to offer hydraulic buffering for flood control, and can also offer water filtration as part of their overall design, depending on the system selected.

Overview of urban SUDS options. Green denotes planted or more ecofriendly options



Following are some of the different categories of SuDS units that can be used for urban runoff:

- Source control techniques include **green roofs**, **soakaways**, **water butts** and **rainwater harvesting systems**. These minimise the volume of water contributed to the wider catchment during a storm event, making storage and treatment more straightforward and effective.
- Pre-treatment systems such as **oil interceptors** and **sediment traps** are typically concrete or plastic tanks which are useful (and/or necessary) where hydrocarbons are stored or likely to be part of stormwater runoff.
- **Filter strips** are wide grassed or thickly planted buffer zones adjacent to impervious surfaces for treatment of runoff water. These are typically used alongside new motorways, but perimeter planting adjacent to car parks can be an effective urban application.
- **Filter trenches** and **infiltration trenches** are gravel filled trenches which treat runoff water from road edges or paved areas.
- **Swales** are wide grassed channels which (typically) permit infiltration as well as transporting runoff water and/or providing storage. These are useful on sites where the topography supports an easy introduction of open drainage rather than covering in pipework.
- **Bioretention areas** are shallow planted areas that temporarily store stormwater runoff and allow it to percolate into the ground. Sometimes called

Rain Gardens, these are typically engineered areas that are filled with soil, gravel or other medium and planted with plant species that can tolerate cycles of flooding and drying. They are used most often in urban landscapes for receiving road runoff as a landscaped feature within a street or car park. They are also useful for receiving roof runoff from individual buildings in the form of a raised planter.

- **Detention basins** are designed for water quality improvement as well as storage of runoff in storm events. They are typically dry basins, but built to facilitate flooding to a considerable depth as needed for storage purposes, then releasing water to the receiving environment or the next stage of the SUDS treatment train. They are often plastic lined and not necessarily as effective at pollution removal as stormwater wetlands for example, so while they provide flood water storage, they are not necessarily the best option where uptake of residual oil/petrol or silt inputs are likely.
- **Infiltration basins** function in a similar manner to detention basins, but are designed specifically to facilitate infiltration of all flows into the ground. These can be very cost effective to build, and can often simply rely on contouring of existing ground within green spaces down-gradient of runoff areas.
- **Pervious paving** allows water to flow into a gravel substrate beneath the paved surface where it is stored for percolation, reuse or for filtration through the substrate to the receiving water or next stage of the SUDS.
- **Geocellular systems** are preformed plastic media which can be used to store runoff water below ground beneath paved areas. They are expensive to install, particularly in existing sites and do not offer a filtration function.
- **Sand filters** are typically used from industrial yards or urban runoff areas where elevated pollution loads are anticipated, or where receiving water sensitivity is high. They require more regular maintenance than some other solutions such as ponds, stormwater wetlands or infiltration basins.
- **Ponds** are a popular SUDS component for both motorway runoff and urban runoff. They are designed to maintain a sufficient depth of water, as well as providing runoff water storage and filtration. They can double as a habitat for wetland wildlife.
- **Stormwater wetlands** are relatively shallow wetland areas that are designed to both store and filter the water volume generated during a storm event. They can be low cost to build and maintain, and provide valuable wildlife habitat.

Regardless of the application any SUDS unit needs to be carefully designed and constructed or installed in order to fulfil the required objectives, in this case amelioration of an existing runoff issue in terms of both volumes and quality. The CIRIA SUDS Manual[1] is a useful reference for SUDS design. Note that many of the low-tech, low-cost solutions can often involve lower maintenance in the long term, as well as being more affordable at the start. Where green areas are present, contouring of the ground can provide an effective infiltration basin or filter wetland, depending on the infiltration rate in the indigenous soils on site.

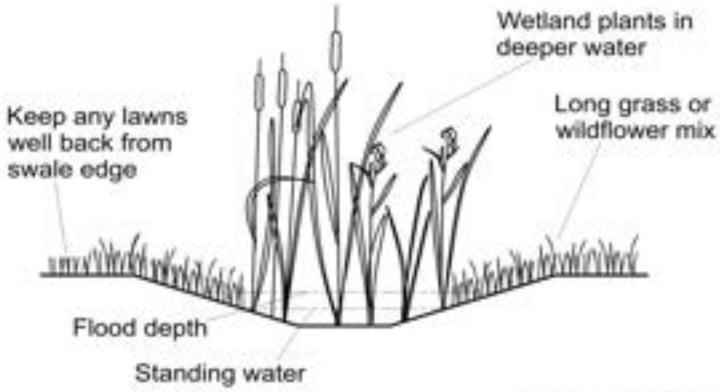
1 Woods-Ballard B, Kellagher R, Martin P, Jeffries C, Bray R, Shaffer P (2007) The SUDS Manual. CIRIA, London

3.0 Summary of Potential SUDS Measures in Skerries

The main measures which appear suitable for the urban environment of Skerries include swales, bioretention areas or rain gardens, stormwater ponds and wetlands, raised planters and water butts.

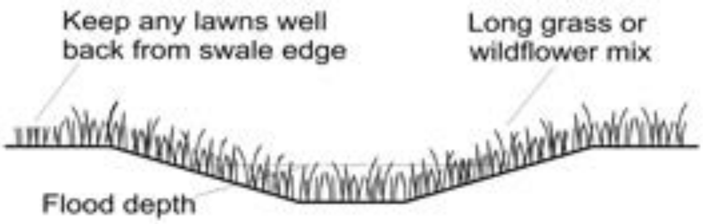
3.1 Swales

Grassed or wetland planted channel set on or close to the contour for filtration of water en route to the river. (See *In Praise of Swales* in Horticulture Connected, 2019, for more Info: https://horticultureconnected.ie/?s=feidhlim+harty&post_type=post)



Section through planted wet swale (L). In essence, a wider version of this set-up serves as a stormwater wetland. (Image: FHWS)

Section through a grassed dry swale (R). Careful contouring of suitable ground can create opportunities for filtration with very little cost. (Image: FHWS)



Two swale examples from a stormwater drainage system in Denmark taking village urban runoff. Dry grassed swale (L) and wetland planted swale (R) both filter water en route to a stormwater wetland lower in the catchment.

Roadside swale in north Cork, with earthen check-dams and pocket pools planted by volunteers as part of local community scheme.

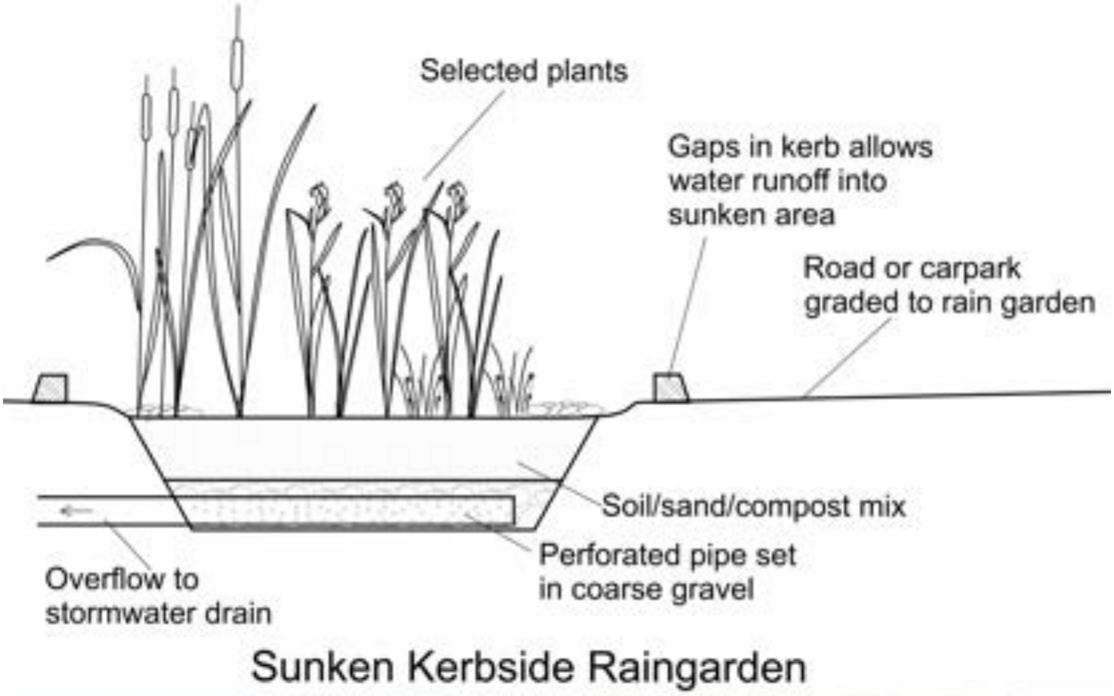
3.2 Bioretention areas / rain-gardens

Planted infiltration areas for receiving runoff from roads or car park areas to provide both filtration and attenuation of the runoff en route to ground. These may have an overflow facility to surface water for excess volumes during storm events, but during dry weather flows are typically able to store and percolate all inputs. (https://horticultureconnected.ie/horticulture-connected-print/2020/spring-2020/site-drainage-with-an-eco-twist-feidhlim-harty/)

Rain-garden during downpour (R) Reproduced with permission from State College PA, USA.
https://www.statecollegepa.us/345/On-Street-Rain-Gardens

Sunken rain-garden strips between parking rows (below)

Rain-gardens or bioretention areas can be as formal and structured or as natural and inconspicuous as desired, depending on the focus and the aesthetics required; anything from a formal in-street sculpture feature to celebrate rainfall, to a depression in a lawn where rainfall from the roof can settle and soak into the ground, recharging the water table below and being filtered through the soil as it moves there.



3.3 Stormwater ponds and wetlands

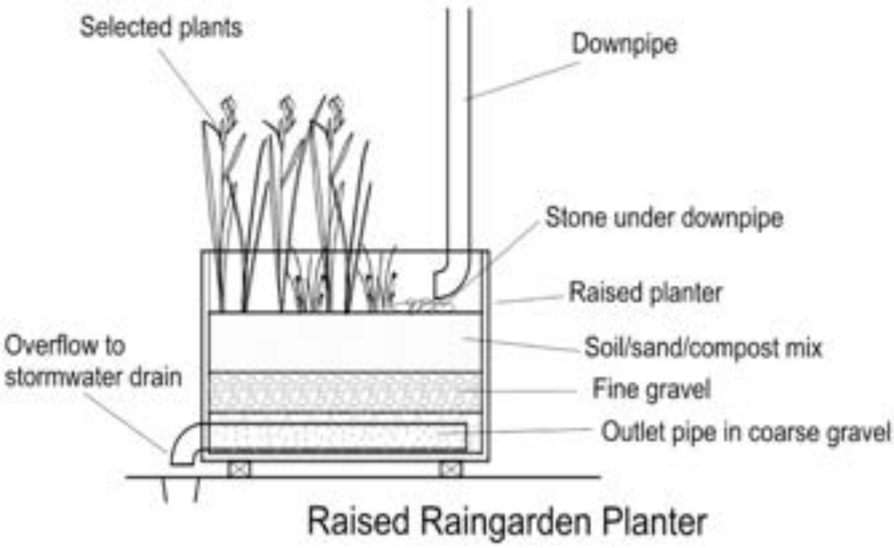
Filter marsh or pond areas that can receive rainfall runoff from streets for storage and filtration en route to the river. Some infiltration may occur, but the base is sufficiently impermeable to support a wetland habitat (in the case of stormwater wetlands) or is lined with indigenous clay, peat or synthetic liner membrane (in the case of ponds). (See: https://www.wetlandsystems.ie/Stormwater.html or more info.)

Stormwater wetland at University of Limerick (below)

Bulrush (upper right) and early planting (lower right) at the Moycullen stormwater wetland, Co. Galway

3.4 Raised planters and water butts

Raised planters and water butts can be useful for urban scenarios where space is limited, but where a solution to roof runoff is still needed. What these do is to store rainwater and thus minimise the throughput to the stream. Details for building raised planters can be downloaded here: https://www.dublincity.ie/sites/default/files/2021-04/a-how-to-guide-to-rainwater-planters-english.pdf



4.0 Skerries Urban Stormwater Site Visit

During the site visit we walked several sections of the town, where either problems of flooding had arisen in the past, or where opportunities for SUDS elements were particularly apparent. These photos follow that walk and offer suggestions for areas where swales, bioretention areas (larger open infiltration areas) or rain gardens (smaller, often more formal, infiltration areas), ponds or wetlands may be possible.

Flooding has been reported in Churchfield Close, and here in the green areas (such as L) the ground level could be dropped to allow gravity flow into a bioretention area for flood water storage and infiltration to ground. Maximum flood depth of 150mm during storm events.

In the same area, green verges between the road and footpath (R) could also be used as rain gardens or swales to receive road runoff for infiltration and storage.

Flooding is also reported on Millers Lane. There may be scope for a modest raingarden sunk into the hard standing in front of the cemetery, but the storage volume may be too modest for the work required. Perhaps better instead to broaden out the flood plain of the Mill Stream.

Just inside the cemetery gate there is a very small area of ground behind the railing (L) which could potentially afford a 30cm wide swale for modest rainwater storage and conveyance. The biggest advantage here is not so much flood water storage per se, but removal of water from the pathway in wet conditions, if this is a problem.

Back towards town there are a number of areas where gullies may be opened up over the space of one or two car parking spaces and converted to rain garden areas. (L). The photo below shows a gully to the left of the traffic cone, possibly in a location too close to a corner to be of safe use as a rain garden, although in circumstances such as these, the landscaped area could be kept within 1m of the kerb, which is already designated as a no parking area, and the overflow routed back to the gully shown, as an overflow during high flow events.

On the waterfront at Weldon's Lane, visible evidence of flooding can be seen in the form of remaining sandbags. Although the sea may be more of a culprit than the stream, and flood water storage at Skerries Mill and in the upper catchment would be of potential benefit.

In the centre of town, there are ample opportunities for replacing gullies in suitably out-of-the-way locations with rain garden features (R), or for removing some areas of the broad paving and utilising it for green space with water holding benefits (below).

This stormwater drain extending into the sea could be opened up close to the road and converted into a stormwater wetland or stormwater pond to filter the runoff en route to the sea.

Near the Red Island car park there are a number of gullies alongside the footpath and at the car park which take runoff, either piped to the sea or into soakaways beneath, below L and R. These could be readily converted to small sunken lawn rain garden features for habitat value (and to filter nutrients if currently routed to the sea.)

On harbour Road more opportunities are present for converting gullies to in-street rain gardens (R and below)

Wherever gutter downpipes discharge at surface level (as shown here, R and below) rather than into sunken gullies, there is a very cost-effective opportunity to incorporate shallow rain garden into the street design.

On Strand Street, (three images below) there are opportunities to take create rain gardens at street level.

This mossy roof (R) on a disused building in town is a reminder of the value of green roofs. Typically a green roof is more engineered than this example, but either will help to cool the air in the urban environment, provide initial storage of rainfall during light showers, and provide microhabitat to mosses and the species of insects that can find shelter with in them, and thus the birds and other animals that rely on the insects as a food source.

Gullies are not always in locations where rain gardens are easy to install (L and below behind Church St.), so every opportunity should be taken to avail of the more straightforward locations and also to address stormwater inlet points to the Mill Stream or the sea by investigating the possibility for stormwater ponds and wetlands at the low end of the pipe run.

Even a shallow open swale of 30-50cm can provide storage and filtration en route to the drain (three images below).

The Community Centre car park has some areas which would be readily converted to rain gardens or swales, with little or no reduction in parking spaces if needed. These could be within the car park (R), or alongside in the grassed areas (below).

Even a narrow area along a hedge can be sunk down to create storage for stormwater (R).

An opportunity afforded by large buildings is to convert the roof surface to rainwater harvesting and/or a green roof, both of which have stormwater benefits (eg. the Community Centre, L).

Trees offer many benefits for water management, and there is space at the perimeter of the Soccer club playing fields (R) for a dense tree line. Trees help water to infiltrate into the soil and also provide space for biodiversity.

Along Dublin Road there are occasional grass verges alongside stormwater gullies. Rather than in-street measures, the verges could be lowered slightly to provide stormwater storage, with the overflow routed back into the gullies during heavy rain.

Anywhere where a footpath gets muddy is an opportunity to gently grade and drop the ground level by 10cm on either side and plant with yellow flag Iris and water mint in a very inexpensive rain garden, swale or wetland to dry out the path. (Above L on Dublin Road; above R off Miller's Lane towards the Mill Pond; Below L alongside a footpath beside the pond; and below R at the park near Skerries Mills).

At the railway bridge local flooding is reported as being an issue. The green areas on either side of Miller's Lane offer space for excavating a sunken bioretention area to store flood water and allow it to infiltrate into the ground rather than contributing to storm flows further down the catchment.

5.0 Project Implementation

5.1 Prioritising SUDS measures introductions

To move forward with SUDS units within the town the following four areas may be followed up on foot of this report:

1. Select one or all of the areas listed below for site specific design and implementation of a number of different SUDS types. Construct as many SUDS features as are easily implemented, first selecting those that are straightforward and more gradually pursuing others over time. Suitable examples may include the following:
    - A sunken on-street rain garden location in town (e.g. on Strand Street). This will require input from Fingal County Council Roads Department and Drainage Department to ensure that the location and designs compatible with their traffic flow and drainage requirements.
    - A sunken lawn rain garden (e.g. three such units to intercept runoff to all three gullies on Red Island). While works in public areas will require FCC permissions, in this instance it should be the Parks Department rather than other departments, where the liaison process should be more straightforward due to lack of any need for roads interface etc.
    - One or more raised planters in town under downpipes. Again this may require liaison with FCC Parks Dept., and with whatever homes or businesses are putting them in, but is otherwise very straightforward.
    - Find a green roof which can be taken as an example of moss recovery and highlight it as a low-cost biodiversity measure/SUDS feature. No input from an external body is needed for this work.
    - Select all muddy pathways and drop the soil level alongside them in sunken lawn rain gardens or swales to dry the paths. It would be good to liaise with FCC Parks Dept on this to ensure that the new area is either kept outside of the mowing regime or the new contouring is gentle enough to take a ride-on mower for an annual cut in September and that the Dept are aware of the changes in ground conditions.
2. Select one larger project area which suffers from noticeable flood damage (e.g. the railway bridge or Churchfield Close) and design and implement a remedial SUDS rain garden or stormwater wetland measure. This element of the project would require a flood studies report or at minimum, input from the OPW and/or FCC Roads and Drainage Departments.
3. Investigate a further larger project within town to pursue in the longer term (e.g. rain harvesting from the Community Centre or the stormwater wetland at the stormwater pipes entering either onto the shorefront or into the Mill Stream just below the Kybe Pond). For rain-harvesting, no outside permissions are required. For any stormwater protect interfacing with the stream, IFI input and potentially OPW input will be needed; and for any project involving existing stormwater drains FCC Drainage Dept. input will be needed.

4. Investigate the inlet pipes to the Mill Stream identified in the next section and assess options for filter measures on any that have stormwater ingress and remedy any grey water misconnections. This may be initiated as part of a community project without FCC or IFI input, however it is important that the approach taken actively and warmly invite the participation of all householders within the catchments under assessment. The aim is to assist homeowners with stream water quality improvements, rather than apportioning blame in any direction.
5. Another potential avenue that may be worth following up is to investigate the route of storm surge overflow from the Skerries sewage treatment system. Firstly determine the route that this takes and confirm that there are no longer any overflows to the Mill Stream catchment. Secondly, investigate whether or not there are records of the number of storm surge overflow events in the year. If there are records it may be a relatively easy calculation to assess how much stormwater storage in SUDS units in the older parts of the town would be required to reduce the storm sewer overflow frequency by a significant proportion.

5.2 Projected SUDS cost estimates

SUDS costs will vary widely depending on the type and scale of each measure, and on the site topography and substrate in each case. Nonetheless, a general overview of costs can be helpful in budgeting future works, so the following provides a rough guide to construction and planting costs (excluding design and VAT):

- In-street sunken rain garden for 1-2 car-park spaces: €5000/unit.
- Off-street sunken rain garden in equivalent surface area, but within lawn rather than tar mac or concrete: €1500/unit.
- Bioretention area within green spaces (e.g. in Churchfield Lane): €2500/unit.
- Narrow swale excavation (e.g. inside cemetery gate or behind Church St.): €500/area if taking water from ground surface rather than deeper pipes.
- Stormwater wetland or pond (e.g. for the head of the stormwater drain on the seafront, or at the green areas at the railway bridge): €5k-50k, depending on depth to pipe invert and land area available. (Costs here exclude system designs; and flood studies reports if needed).
- Shallow lawn rain garden or swales (e.g. at Red Island gullies, taking surface level runoff): €500/unit.
- Green roofs: €0 for existing roof surfaces where all that is needed is to let moss establish naturally and thicken. Many thousands for more formal modular green roof constructions. There are also "brown roof" design approaches with enhanced habitat benefit, which can be added relatively cheaply €500-5k depending on area and approach, on existing flat roof surfaces with existing structural strength.
- Tree planting (e.g. at GAA Grounds): can be free if trees can be sourced from Local Authorities or grown in primary/secondary school tree nurseries.
- Raised planters under downpipes: €200-500/unit.
- Rainwater harvesting: from €0 to many thousand depending on approach and roof size.

5.3 Example SUDS project for 2025

An area that has been identified as a project with potential for progressing in 2025 is the flooding issue at the tennis courts.

The issue is that during heavy rainfall events the tennis courts are liable to surface ponding. Two potential causes may be at play; firstly the lack of runoff down-gradient of the tennis courts for removal of heavy rainfall during a downpour. The other possible cause may be the high water table during a high tide. This two factors may also be linked, leading not so much to flooding by the rising tide as such, but possibly due to a reduced soakage into the soil during high tides.

One possible solution is to build a SUDS rain-garden type set-up around the perimeter of the tennis courts, set such that the new soil level is *c*.100mm below the level of the court. This would help to provide storage of water during heavy rainfall, freeing up the courts for playing once the rain stops. It will not however address the issue of elevated water tables due to high tides. It is proposed that if we proceed with the SUDS set-up then at least there will be an improvement during those times when the cause is due only to heavy rainfall, with a lower tide. This in itself would help to keep the courts free for longer; and it may also help alleviate tidally induced flooding by simply providing greater storage of water at surface level – effective if the actual tide levels are at even a modest distance below the level of the courts.

The proposal is to design a SUDS set-up that will be designed to receive and store the runoff volume generated by a 1:1 year rainfall event. The following will be required to implement the project:

1. Initial design calculations to assess system surface area and depth requirements. (FH Wetland Systems, costs included in the main design fee.)
2. Agreement that the areas calculated for use around the tennis court perimeter are available for use for this purpose. (Sustainable Skerries. No cost.)
3. Design of the SUDS unit. (Cost: €3500 + VAT for design drawings)
4. Excavation of the design area. (Estimated cost of €5000 + VAT at 13.5% for 200m^2 system around the 200m perimeter length of the court area.)
5. Digging in woodchip into the subsoil for enhanced drainage and soil biological activity. (Works included in item 4 above; woodchip costs: €500 + VAT)
6. Plant supply of yellow flag Iris; water mint; brooklime and other selected plant species that are tolerant of flooding. Planting at 30cm spacing across 200m^2 = 2200 no. plants. (Cost: €4400 + VAT at 23%).
7. Planting of same by local volunteers (No cost.)
8. Site meeting with FHWS (€650 + VAT) plus online meeting support for 4 zoom calls with SS and the construction team (€250 + VAT per meeting = €1000 + VAT).

Total estimated project costs: 10050 + VAT at 23% (€12361.50 incl. VAT); and 5000 + VAT at 13.5% (€5675) = €18036.5 incl. VAT. All costs will be subject to clarification at the implementation phase with each relevant supplier or contractor involved.

Benefits:

- Example SUDS unit to demonstrate Nature Based Solutions in action.
- Reduced flooding at the tennis courts in Skerries.
- Biodiversity enhancement for pollinators and within the soil itself.
- Aesthetically beautiful finish.

6.0 Conclusion

This report sets out an overview of the site meeting discussions between FHWS and Helen Scullion of Sustainable Skerries in April 2024, assessing a suite of potential SUDS measures within the town for enhancing water quality and/or hydrodynamics of the Mill Stream.

The SUDS measures proposed include a combination of swales, bioretention areas / rain gardens, raised planters and/or stormwater wetlands or ponds. The information presented here is a proposal of a suite of the most suitable measures, but does not constitute a design for any specific area. Further research or design input may be needed for certain areas to ensure that flooding or erosion are not exacerbated.

In general terms liaison with FCC will be required for most of the measures outlined, with the exception of those on private property such as green roofs, rainwater harvesting or tree planting in sports grounds. The measures generally do not require interface with the Mill Stream itself, so liaison with Inland Fisheries Ireland is generally not required; and likewise there is no weir creation or removal requiring OPW licencing or liaison. That said, for larger stormwater projects with any impact on the stream habitat or hydrodynamics, liaison with both of those bodies is recommended.

Given the volunteer nature of any local community group it can be a challenge to organise a large, time-consuming project. it is thus proposed that the local community start with the project for which there is the most energy and enthusiasm. Once one project is completed there will be greater confidence in approaching the next; and greater community buy-in with each success.

The list of priorities in section 5.1 provides ample scope for multiple projects if time and resources permit. Meanwhile the tennis court SUDS project is a potential starting point for the group, to begin implementation of a relatively easy project and then move on to others in due course.