

Sanitary Services: Water, Drainage, Wastewater Treatment & Disposal

General Synopsis

Water Supply

The existing trunk mains water supply through the DSWLAP area is derived from the Cavan Hill facility and is adequate to meet the demands of the plan. Planned extensions to the water supply network will, in general follow the planned road network.

Waste Water

The proposed network to serve the plan area is illustrated on Map 18. Separate foul and surface water drainage will be required throughout the plan area. The proposed sewer network is illustrated on Map 18. The DSWALP encourages the separation of foul and surface water at source to maximise the treatment capacity at the wastewater treatment plant.

Drainage

Certain areas of the DSWLAP area are known to be at risk of flooding. In turn, drainage deficiencies in the DSWLAP area have historically caused downstream flooding in existing built-up areas of Dundalk. These include Long Avenue, Blackwater Court, Rampart Road and Thomas Street. In order to address this issue, a surface water flood prevention scheme will be required. This scheme will include improvement works to the capacity of both the Rampart and Blackwater Rivers. Such works will include removal and upgrading of existing culverts on both rivers. The costs associated with such works will be borne by developers within the DSWLAP area itself.

Sanitary Services: Detailed Issues

A major constraint on the development of the DSWLAP is the lack of piped drainage infrastructure adequate to service the entire plan area. To date, a purpose-built foul effluent pipe has been installed along the line of the former Dundalk – Carrickmacross Railway line. This gravity main is designed for a capacity of 14,000 p.e. thereby setting a ceiling on the scale of development, assuming that storm water can be accommodated adequately and that water supply is not problematic. Part of this existing capacity is already used for the relief of surcharging on both the Dublin and Carrickmacross roads, combined sewers.

In the longer term, over the course of the plan period, major infrastructural works will be required, including trunk mains of sufficient capacity together with a water mains pumping station. The pipe network will radiate from the pumping station and generally follow principal roads in the DSWLAP.

Surface Water Issues

In the event of major storms, the peak flood from the upstream area arrives down the river network at the zoned lands circa 24 hours after a storm. The piped surface water collection system for the catchment must have drained the area within a 24 hour period or else the runoff will add to the peak flow leading to exacerbation of flood risk. As the zoned lands develop, this risk will be accentuated.

The effect of development would be to increase both the rate of runoff due to the replacement of overland flow with piped systems and impervious surfaces; and the quantity of runoff as natural soakage would be significantly reduced.

Interim Measures, Surface Water

Any interim measures proposed prior to development of the pumping station and piped collection network must either:

- Drain to other catchments
- Drain to subsoil
- Retain runoff until after the flood peak has passed

This approach would require that runoff be maintained at “Greenfield” levels with substantial storage and is really only practicable on large scale developments as the allowable discharge per hectare of circa 3l/s would preclude the use effective of flow control devices for smaller developments.

Emphasis on recharge of groundwater through use of soakage based attenuation facilities would reduce the overall volume of water reaching the streams within the critical time horizon.

It is recommended that a drainage master plan for the area should be prepared. This will be based on “regional” attenuation facilities working in conjunction with source controls employing subsoil drainage in the event of consideration being given to short term deferral of provision of the pump station and piped network.

It must also be accepted that if the pump station is not provided at the initial stages of the development some increased risk of down stream flooding may arise due to hydraulic constraints in the existing Ramparts/Blackwater Streams if the peak flows to Balmer’s Bog are affected.

Other factors that could lead to increased flood risk are:

- Impact of rising tide levels on discharge capacity of outfall, be it operating by gravity or as a pumped main.
- Impact of increased downstream developments discharges on capacity of Ramparts River/Blackwater.
- Effectiveness of discharge control systems of new downstream developments.

In summary a SUDS* approach to drainage in the development area is desirable but would only be effective if

- Rate of discharge to drains is not allowed to increase above Greenfield levels.
- No increase in volume of discharges permitted that would add to the peak flow in the river which occurs some 24 hours after a storm.
- No increase in storage requirement at Balmer’s bog arises from additional runoff at critical times.

A risk of flooding would still exist if two significant storms occurred within a 48 hour period whereby the storage capacity in both Balmer’s Bog and constructed storage areas was not available to contain additional volumes of runoff generated by the second storm.

Foul Sewerage

The development potential of the area is constrained by the capacity of the existing rising main laid as part of Dundalk Sewerage scheme. This can effectively cater for a dry weather flow of 2905m³/day or an ultimate population equivalent of c 14,000 PE.

A further constraint is capacity in Coes Road Pumping Station and in particular if capacity therein is dedicated to areas outside the original design catchment. Such areas may include the Dundalk South and East Sector south of the Southern Link Road. The effect of major development in these areas, should they precede DSWLAP would be to further constrain available capacity for development unless a new pump station was developed which permitted DSWLAP loads to be diverted independently to the WWTP.

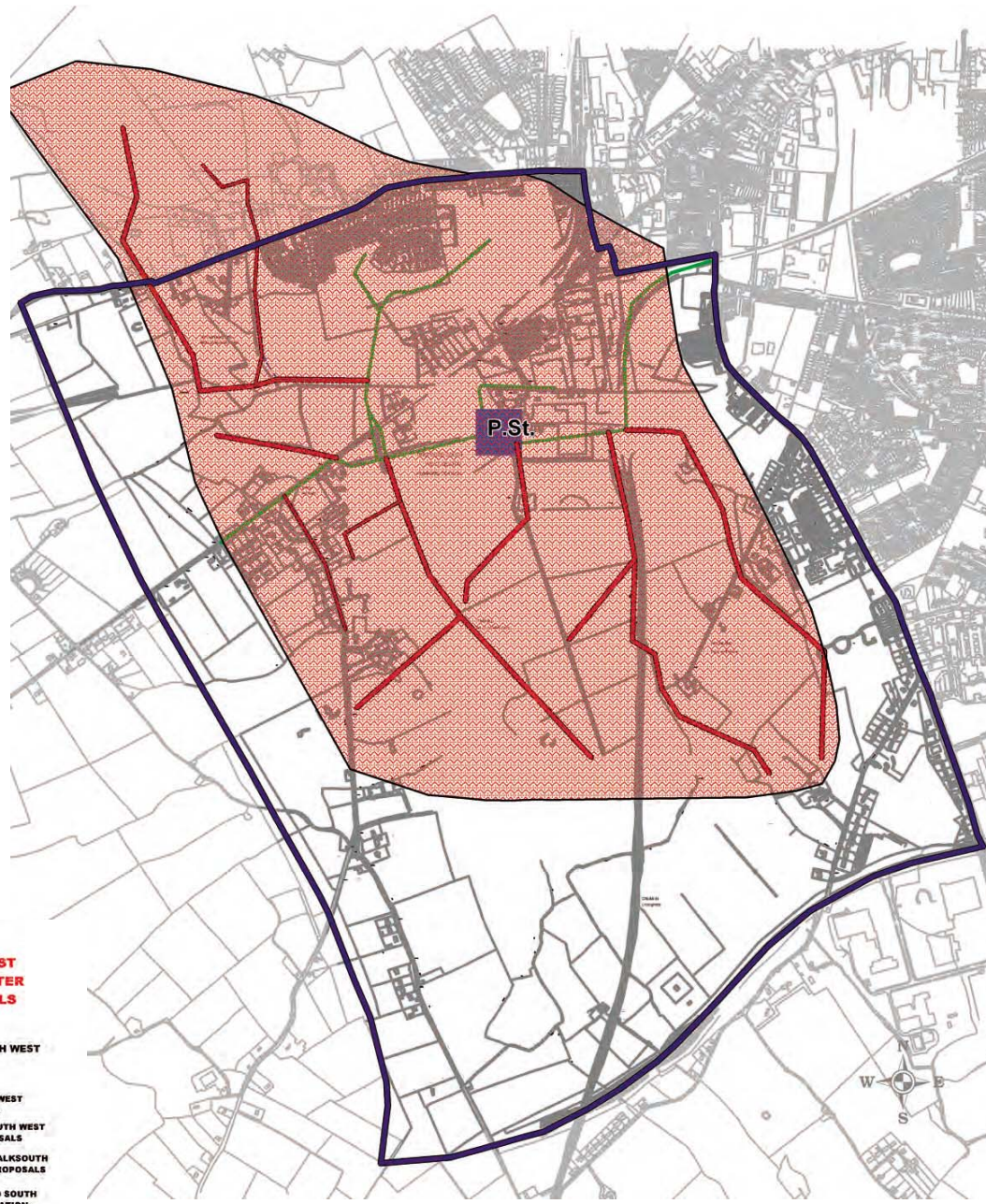
Interim Measures; Foul Sewerage

In the short term to facilitate development of the area, the possibility of directing flow from peripheral areas contiguous with the existing network needs to be examined. In particular availability of capacity in both the Dublin Road and Carrickmacross Road networks. Were capacity available, interim arrangements to discharge to these areas could be put in place until the pump station and collection network were developed. Any such arrangement would have to be capable of being rediverted to the proposed network and costs associated with both provision of network and diversion works would have to be recovered.

Water Supply

The area would appear to have an adequate supply of water from the existing trunk main which traverses the lands. The Dundalk Water Strategic Review, a brief for which is with the DEHLG, would address issues such as local storage requirements if any, and key network infrastructure requirements.

*Sustainable Urban Drainage Systems



Map 17 Sewer Network and Catchment.

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Interim Development

A range of provisional measures could be implemented prior to the full servicing of the DSWLAP. The full servicing of the plan area will require the production of a sanitary services master plan. In the interim, it is considered acceptable that development of certain areas of the DSWLAP could proceed under the aegis of temporary measures with the proviso that full development of the plan area will not be permitted until final sanitary services solutions have been agreed.

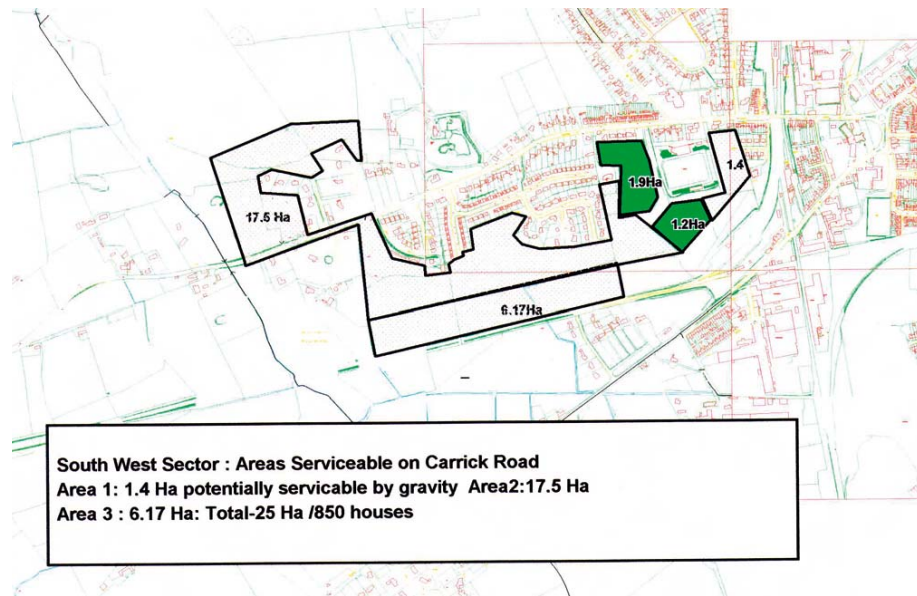
Mounthamilton; Interim Measures

A significant proportion of Mounthamilton could be serviced in the interim, prior to the implementation of the full DSWLAP sanitary services measures. Map 17a indicates the area which could potentially discharge foul sewerage to the existing sewerage system in the vicinity of the railway line, thus temporarily bypassing the need for trunk mains, main pumping station and rising main. It shows three areas, 1.4 ha, 17.5 ha and 6.7 ha respectively, with some lands draining by gravity and others requiring some kind of temporary pumping arrangement. Alternatively all areas could utilize a temporary pumping station and avoid the necessity to upsize substantial portions of existing pipe work.

An examination of existing pipe work indicates that the limiting factor in determining the available capacity is not topography, but the capacity of the existing pipe work under the Dundalk – Dublin railway line which has been estimated to have spare capacity for some 300 dwellings. It is envisaged that by upsizing pipes in the vicinity and installing a small temporary pumping station and rising main, an additional 300 dwellings could be accommodated.

Storm runoff from this area will drain to Balmer's Bog. Drainage proposals from developers will have to provide interim solutions which will not adversely affect total flows to Balmer's Bog, runoff rates to Balmer's Bog (MOC), or peak storm levels in Balmer's Bog. Additionally, solutions for attenuation etc will have to be undertaken on a wider DSWLAP basis as localized attenuation is likely to be ineffective.

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Map 17a Mounthamilton Interim Measures.

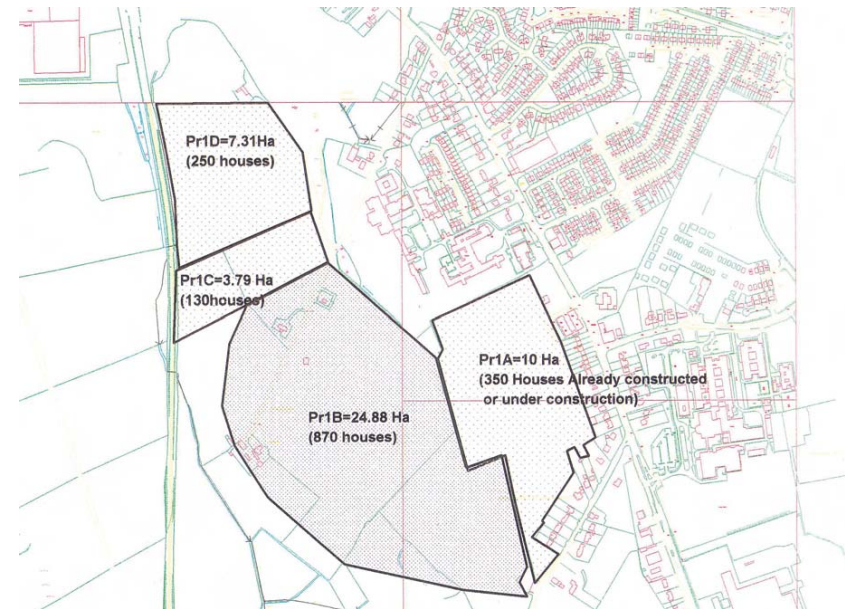
Priorland; Interim Measures

The areas of Priorland as illustrated in Map 17b may drain into a new foul sewer laid in the area. It is estimated that this sewer has sufficient spare capacity to take foul effluent from some 600 dwellings, provided that the additional flow can be discharged at the Dublin Road end of Priorland Lane. On this basis, area Pr1A could utilize fully scaled DSWLAP drainage pipes as far as Priorland Lane where a small temporary pumping station could lift effluent to the sewer running down the Dublin Road and thereafter into the main sewer along the railway line.

Further development of areas Pr1C and Pr1D could be considered provided the capacity of the Dublin Road sewer was not reached or, alternative methods of reaching the railway line sewer, were proposed.

It is not envisaged that any other area, with the exception of those areas of Mounthamilton and Priorland detailed above, would have access to the existing foul sewerage system. All other areas outside those detailed, would not be possible to develop prior to the provision of trunk mains, main pumping station and rising main. The development of the detailed areas of Mounthamilton and Priorland would provide for some 2,700 p.e. or some 20% of the remaining capacity of the existing pipe in situ along the former railway line.

In summary whereas peripheral development may be catered for by interim arrangements any significant level of development would require the construction of the pump station and associated collection network. An integrated approach in the provision of the network in conjunction with elemental development of subdivisions would be required.



Map 17b Priorland Interim Measures.

Solid Waste

Bring Facilities

The DSWLAP requires recycling ‘bring’ facilities to be located strategically around the plan area so that every household has convenient access to them. Facilities for the recycling of glass, paper, clothes and beverage cans must be provided within the plan area. Additional facilities may also be required. They should be located so as to minimise negative impacts on residential amenity and be easily accessible to collection vehicles. Generally these facilities need to be cleaned regularly.



Bring Facility

Civic Amenity Facility

It is the intention of the Councils to provide a Civic Amenity Site catering for the entire DSWLAP area at a future date. This facility will be provided in partnership with the relevant developers in the plan area. Developers will be expected to co-operate fully with the Councils in the provision of this facility.

Refuse Facilities

Provision should be made for the separation of waste at source in the design of all development. This should entail the providing space for three separate ‘wheelie bins’ for each dwelling. The shared provision of waste storage facilities in residential and commercial development, may also be acceptable to the planning authority.

It is desirable that home composters should also be provided in the rear gardens of all houses, schools and public buildings generating waste materials.



Household Composter.

Information Technology

In order to facilitate working from home, entertainment and education, all development within the study area must have access to broadband technology. Cabling for broadband and television must be provided underground to serve all residential and commercial development.

Energy

All residential and commercial development must be connected to the national electricity and gas networks.

Conservation Strategy

A number of sites of potential archaeological interest have been identified in the DSWLAP area. The planning authority will normally require any development likely to impact on these sites to be carried out under the supervision of a licensed archaeologist.

The planning authority may require a bat survey to be carried out in certain case where works to existing structures over ten years old are proposed, in advance of planning permission being granted.

Site Analysis Requirement

The Planning Authority will normally require a site survey identifying significant trees and other features on the site. It may require a tree survey where significant trees or other vegetation exists, the protection of that vegetation during construction and its incorporation into the design of the scheme.