

Appendix I

Stormwater and Sewer Management Concept Plan by Niven Donnelly & Partners Pty Ltd



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**WATER MANAGEMENT PLAN FOR
WOLLONDILLY ANGLICAN COLLEGE, BARGO
OLIVE LANE LOTS 1 & 5 & PART 3 OLIVE LANE PLUS EXISTING SCHOOL SITE
REZONING**

INTRODUCTION:

The proposed rezoning of the Olive Lane lots is planned for expansion of the existing college campus. The concept for management of stormwater and sewage generated on the sites is described below and by the attached concept water management plan, drawing No.218052-DAH01 attached.

STORMWATER DRAINAGE

Existing Conditions:

The majority of Lot 1 falls to an existing dam in the south west corner which overflows via a culvert under the adjacent right-of-way to Lot 3 and through Lot 5 to the natural water course on the western boundary. The existing levels indicate a small area at the northwest corner of Lot 1 falls toward the Olive Lane table drain.

The upper two thirds of Lot 5 gravitates to a small central dam which overflows onto the lower one third of the site which gravitates to the natural watercourse creating the southwestern boundary.

The existing College site at 3000 Remembrance Drive, has an existing stormwater system which directs the top area of the site toward a dam on the northern end of the site where low stormwater flows are harvested by the dam as the primary source of supply for landscape irrigation. The higher flows are diverted to a gross pollutant trap and then gravitate to the natural water course running through the site. The lower area of the developed site gravitates directly to the gross pollutant trap and then to the natural water course.

Proposed Systems:

The proposed stormwater drainage system for Lot 1 will provide drainage from areas up to the northern boundary via gravity and including driveways and parking areas, buildings, hardcourt play areas and landscaping. The system will direct the stormwater to the existing dam on the existing college site to supplement the landscape irrigation water supply. The dam will also act as a sediment basin and an on-site detention basin, with the outlet control screened to remove any trash. The discharge from the outlet control will gravitate via a new pipeline within the existing college site to the natural water course. The small area at the northwest corner of Lot 1 which is believed to fall toward Olive Lane may be retained as currently discharging to the table drain.

The proposed stormwater system for Lot 5 will provide drainage from all driveways and parking areas, buildings, the playing field and landscaping. The system will gravitate via a gross pollutant trap and an on-site detention facility before discharging to the natural water course on the western boundary. On the low side of the agricultural plots, grassed swales will be provide to slow down and filter any runoff to the natural water course.

Design Parameters:

The design for the stormwater drainage system has been based on AS 3500.3 and Wollondilly Council's DCP requirements and will provide a piped system for all storm events up to and including the 20 year Average Recurrence Interval (ARI) storm having a 5 minute rainfall intensity of 176mm per hour. Stormwater flows exceeding the 20 year ARI event will be catered for by overland flow.

SEWAGE DRAINAGE, TREATMENT AND EFFLUENT DISPOSAL

The existing college site has a gravity sewage system to a pumping station which raises the raw sewage to an on-site sewage treatment plant. Following treatment, clarification and chlorination, effluent is pumped to the existing 6 zone irrigation field.

The College is currently having the sewage loads measured and the capacity of the existing treatment plant assessed to determine if the plant and associated effluent irrigation fields have adequate capacity to cater for the proposed 2025 maximum enrolment of 1,185 students and 122 staff totalling 1,307 persons.

Should the investigations determine the treatment plant and or effluent disposal fields have inadequate capacity to handle the predicted student and staff numbers, they would be upgraded to the capacity required.

Yours faithfully

NIVEN DONNELLY & PARTNERS PTY LTD



PETER DONNELLY
Director

