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State # 060

MINISTER FOR ENVIRONMENT

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION ACT 1986)

PROPOSED BULL CREEK TAFE COLLEGE - HORTICULTURE

OFFICE OF TECHNICAL AND FURTHER EDUCATION

This proposal may be implemented subject to the following conditions:

1. The proponent shall adhere to the proposal as assessed by the Environmental Protection Authority and shall fulfil the commitments made in the Notice of Intent and published in the appendix to EPA Bulletin 359 (copy of commitments attached).

2. Prior to the initiation of horticultural activities, the proponent shall develop and subsequently implement a Nutrient and Irrigation Management Plan which includes the design of a ground and surface water monitoring programme, to the satisfaction of the Environmental Protection Authority.

3. The proponent shall regularly liaise with and report monitoring results to the Environmental Protection Authority, the Department of Agriculture and the Water Authority of Western Australia.

4. If monitoring shows that polluting loads of nutrients, pesticides or other substances are escaping to Bull Creek or the Canning River, the proponent shall initiate remedial action (eg groundwater recovery and treatment) to the satisfaction of the Environmental Protection Authority.

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MINISTER FOR ENVIRONMENT

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PROPONENT'S COMMITMENTS

GENERAL

1. There will be some noise, but not much more than that generated by normal parks and gardens maintenance programmes and that generated by additional traffic.

2. Any use of chemicals and machinery will be carefully managed so that the effects of this development upon human health will be negligible.

3. Where possible, significant vegetation such as jarrah, banksia, paperbark and christmas trees will be preserved in gardens and tree belts.

4. Waste disposal will be via deep sewerage, and runoff from roofs, roads, carparks etc will be disposed of in such a way as to minimise flooding or perturbations of the water table.

5. There will be extensive plantings of trees, shrubs and flowers, and development of the site, which is in a poor condition, will improve the aesthetics of the region.

6. Tree belts developed around the site will be integrated with Bull Creek Park vegetation. Additionally, some support for development of the Bull Creek Park in co-operation with the City of Melville could be provided.

7. Buildings and gardens will be tastefully designed and laid out. College gardens will be designed to contain a maximum number of plants with low water requirements, with special attention being given to the landscaping of car parks.

8. Disturbance to the site other than that necessary for development will be kept to a minimum.

MANAGEMENT

9. Activities associated with horticultural areas will be at demonstration and teaching levels, rather than industry production levels. Where it is necessary for students to be involved at industry levels, they will use commercial facilities. Cultivated areas will be under occasional, rather than continual production, due to the nature of the academic year.

10. An irrigation system aimed at minimising nutrient and water loss from the site will be designed and implemented with the assistance of the Department of Agriculture. Techniques employed for reducing water use and preventing water table rise will also minimise leaching of nutrients and pesticides to below the reach of plant roots.

11. In landscaping and site works, low areas will be filled with Jandakot subsoil (which has a higher cation exchange capacity than Bassendean Sand) or other suitable materials capable of retaining most of the applied phosphorus and other nutrients.

PROPONENT'S COMMITMENTS

12. Where cultivation and intensive plantings are to be carried out, the soil will be amended with organic matter and/or "fines" (material with high clay content).

13. When choosing a suitable amending agent care will be taken to avoid Phytophthora cinnamomi and other soil pathogens.

14. There will be liaison with the Environmental Protection Authority concerning any requirements for soil amendments.

15. A fertiliser programme will be developed so that only the quantities of fertiliser necessary to produce optimum growth will be used. The programme is expected to include a combination of organic manures and chemical fertilisers. Methods of application will be a combination of side dressing, fertigation and preplant establishment.

16. Measures will be taken to determine appropriate water and nutrient usages so that wastage will be kept to a minimum.

17. Nutrient losses in leachates will be minimised to acceptable levels by the following:

    (1) use of soil amendments;

    (2) optimal fertiliser application methods;

    (3) matching fertiliser application techniques with individual crop needs;

    (4) use of appropriate soil and tissue tests to determine fertiliser requirements; and

    (5) use of physical barriers.

18. Irrigation techniques will be designed in consultation with officers of the Department of Agriculture to minimise throughput of water and the consequent raising of the water table, by the development of optimal watering regimes.

19. Maximum use will be made of unconfined surface water which contains nutrients and other pollutants leached from applied fertilisers.

20. A lined pond will be constructed in the low swamp area which will act as a sump for drainage, and allow groundwater to be added for further irrigation, thus creating a closed, or partially closed, nutrient system. It will also act as a sediment trap if red mud, or other fines are applied.

21. Irrigated areas will be located so that crops with the highest water requirement are located on upper slopes and dune crests where water-logging does not occur.

22. Fruit and vine crops will be micro-irrigated to reduce total water use and make water available to plants over a more continuous period of time.

PROPONENT'S COMMITMENTS

23. Sprinkler irrigation will be minimised and confined to those areas where there is no recommended alternative.

24. Pesticides will be used in accordance with current Health Department regulations and recommendations. Their application will be closely supervised and avoided during windy conditions.

25. The use of physical barriers, such as the emplacement of plastic sheeting or bitumen pavements, are means by which nutrient and water loss can be minimised. The various methods will be investigated and used in suitable areas where appropriate.

26. Appropriate quantities of trees and shrubs will be planted to assist with nutrient and water trapping. The area of steepest gradient in the north west corner will be planted with suitable vegetation. This, together with the plantations shown on the concept plan, will act as a biological filter and reduce the movement of water and nutrients to adjoining areas.

MONITORING

27. An appropriate monitoring system will be developed in consultation with Murdoch University and the Department of Agriculture. Close liaison will be maintained with the Environmental Protection Authority to ensure acceptance of the proposed monitoring system.

28. Initial ground water and nutrient levels will be established as a base against which changes can be measured.

29. The current total soil nutrient content, particularly phosphorus, will be measured and recorded together with the capacity of the soil to retain added phosphate against the leaching action of winter rains and irrigation. Phosphate sorption tests as a measure of retention capacity will be determined on both surface and subsoil, particularly the yellow-brown subsoil of the Jandakot soil types.

30. Subsequent soil sampling and analyses will indicate changes in soil nutrient status following development. Samples taken will be analysed and recorded at quarterly intervals or at other times determined in discussion with the consulting groups.

31. Groundwater levels and nutrient concentrations will be established for both summer and winter conditions.

32. Sampling of water and its subsequent analysis for nutrients will be carried out and recorded at monthly intervals.

33. Changes in the levels and nutrient status of deeper aquifers are expected to be minimal. These will be measured in bores installed to supplement near surface irrigation waters.

PROPONENT'S COMMITMENTS

34. A lined pond constructed to provide irrigation water, and to act as a sump for drainage, will provide points (where drain pipes discharge into the pond) from which regular sampling can occur to pinpoint the source of any undesirable build-up in groundwater nutrient or pesticide concentrations.

35. Records will be maintained indicating use of irrigation and nutrients.

36. Co-operation with the Water Authority of WA and/or the City of Melville will be sought in the establishment and maintenance of the monitoring programme.

37. The results of the monitoring of soil, water and nutrients will be reported to the Environmental Protection Authority, the Department of Agriculture and Murdoch University, as required.

38. The site will be freely available for co-operative use by groups interested in utilising it as an education and extension resource.