



## Watten Estate Upgrading Programme Working Committee

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10 JANUARY 2022

Dear Watten Estate Residents

### **WATTEN ESTATE UPGRADING PROGRAMME (EUP) - DRAINAGE UPGRADING**

We held a Townhall session on Friday 19 Nov 2021 to share information with residents on the drainage upgrading works that will accompany the Watten Estate Upgrading Programme (EUP). We thank the residents who attended the Townhall for sharing their views and suggestions. This letter serves to inform all residents on the likely extent and impact of the drainage upgrading works, and also addresses the feedback that had surfaced during the Townhall.

#### Relationship between EUP and drainage upgrading

2 Drainage upgrading will be undertaken by PUB for all estates undergoing EUP. It is usually welcomed by private estate residents, as most rebuilt drains can be covered, thereby creating new or wider footpaths. Typically, existing trees that are near drains being rebuilt would need to be removed; and new trees will be planted to replace them after the works are completed.

#### Status of drains in Watten Estate

3 PUB has studied the area and found that *most drains within the estate need to be upgraded to cater to higher flow capacity and/ or their structural design lifespan have been reached and they need to be renewed*. This means we can expect many trees within the neighbourhood to be felled and replaced. This would be the case even if we do not require new footpaths to be created from covered drains.

4 On behalf of our residents, we have asked PUB if it was possible to leave some of such old drains untouched, in order to preserve more trees. PUB's assessment is that this would be inadvisable, as continued deterioration of the old drains could lead to poor drainage flow, creating grounds for mosquito breeding or increase flood risks. Ground settlement triggered by drain deterioration could also result in damage to public and private properties. Please refer to Annex A for more details. NParks has also been consulted by PUB on this matter. NParks has no objection to the removal of trees to facilitate drain reconstruction and will coordinate with PUB to plant trees to replace those that are felled.

Key points to note

5 We therefore feel it is important to bring the following points to our residents' attention:

- a. Many trees, including the larger and older ones, that are near old drains, will have to be removed in order to facilitate drain reconstruction;
- b. NParks is committed to replant more than the number of trees felled at permissible planting spaces; and
- c. We will work closely with the agencies to create footpaths above reconstructed drains wherever feasible, but creating footpaths is not the reason for felling trees. As long as the drain has been earmarked for reconstruction by PUB, affected trees will have to be removed even if residents feel that a footpath is not needed.

6 While every effort will be made to minimise the impact of drainage upgrading works on trees, the preliminary assessment is that most trees along the roads marked out as Category 1 and 2 in Annex B will eventually be felled and replaced at the planting verges.

7 As the site situation varies from house to house, the PUB project team will update each homeowner according to the public engagement plan shared by PUB during the townhall. Please refer to Annex C for more details. If there is further clarification required on drainage works, please email Ms Siow Wen Ni at [Siow\\_Wen\\_Ni@pub.gov.sg](mailto:Siow_Wen_Ni@pub.gov.sg). For general feedback, please email Ms Sim Ann at [hbtsimann@gmail.com](mailto:hbtsimann@gmail.com) and Ms Janice Choong at [Janice\\_Choong@pa.gov.sg](mailto:Janice_Choong@pa.gov.sg).

Thank you.

Yours Sincerely,



**Ms Sim Ann**  
Adviser to Bukit Timah Grassroots  
Organisations



**Mr Fong Kwok Shiung, PBM**  
Chairman  
Watten Estate Upgrading Programme  
Working Committee

## Drain Conditions in Watten Estate

- Assessment of drains are based on:
  - Drainage capacity in accordance to PUB's Code of Practice on Surface Water Drainage (COPSWD).
  - Physical condition of the existing drains.
- Most of the drains in the estate require an upgrade in the drainage capacity to follow the latest design standards in COPSWD. Moreover, the drain conditions in the estate have deteriorated and are now at the end of their design life span.
- Therefore, PUB has proposed to upgrade the roadside drains in Watten Estate. The implementation of the improvement to old roadside drains need to be promptly carried out to avoid the possible consequences as listed in the next few slides.
- The subsequent slides present the physical condition of existing drains in several parts of Watten Estate and they are all showing signs of deterioration that requires to be timely renewed, i.e. reconstructed before giving rise to problems.

## Drain Conditions in Watten Estate

- Photos show drains' walls have eroded over time.
- Upon renewal of drain structure under PUB project held at the same period of EUP, the possible consequences as listed in Table A, can be avoided



Table A: List of possible consequences:

- Drains' walls deteriorated over time and drain structure could give way.
- Repair may no longer be feasible and pockets of exposed ground and irregular surfaces could result in water stagnation
- Such condition easily gives rise to environment issues such as mosquitoes breeding
- Due to roughness of drain surface also causes reduction of drainage capacity
- The latter could result in **higher flood risks**

### Drain Conditions in Watten Estate

- Photos show drains' walls have deteriorated over time and show signs of misalignment/settlement
- Upon renewal of drain structure under the mentioned PUB project, the possible consequences (as in table B) can be avoided



Table B: List of possible consequences to avoid:

- Current photos show flowing of stormwater in existing old drains
- Old drain show signs of misalignment and settlement
- Further misalignment could result in reduction in drainage capacity &
- Further settlement creates pockets of stagnant water
- Stagnation of water gives rise to environmental issues such as **mosquito breeding**



### Drain Conditions in Watten Estate

- Photos show drains damaged by trees' roots
- Upon renewal of drain structure under the mentioned PUB project, the possible consequences (as in table C) can be avoided



Table C: List of possible consequences:-

- Drains damaged by tree roots expansion
- Failure of drain material expose the ground surface and allows penetration of water
- The latter leads to soil mass losses underground
- De-stabilise the trees with soil loss below trees base
- Settlement of adjacent grounds that could further **destabilise nearby structures, including residents' homes** and cause ground settlement
- If no further intervention, ground settlement could lead to **damage of underground services and disruption of services supply**



## Drain Conditions in Watten Estate

- Drains damaged by tree roots expansion



## Drain Conditions in Watten Estate

- State of deterioration of drains' condition: Bulging or poor conditions of existing drains

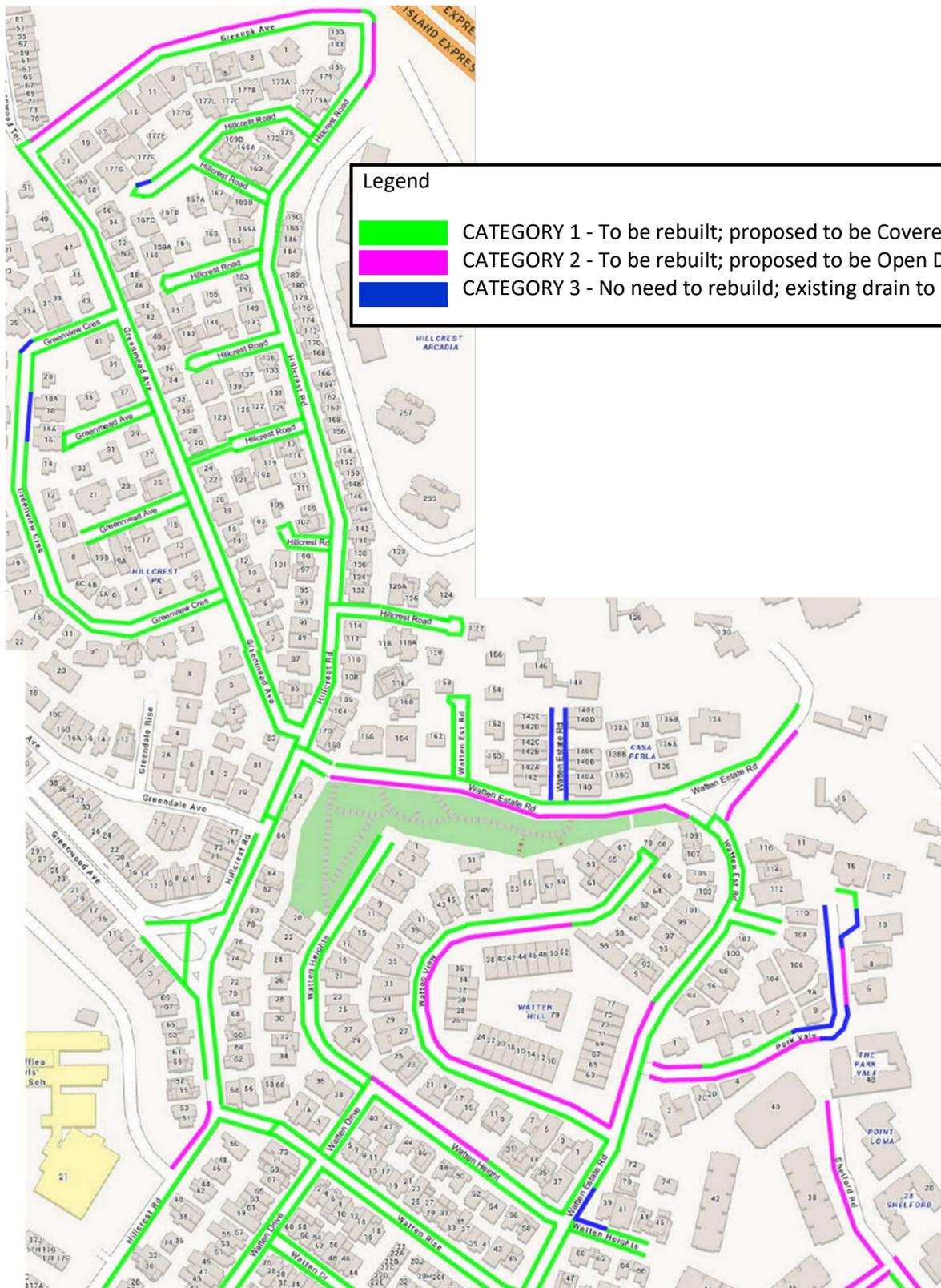


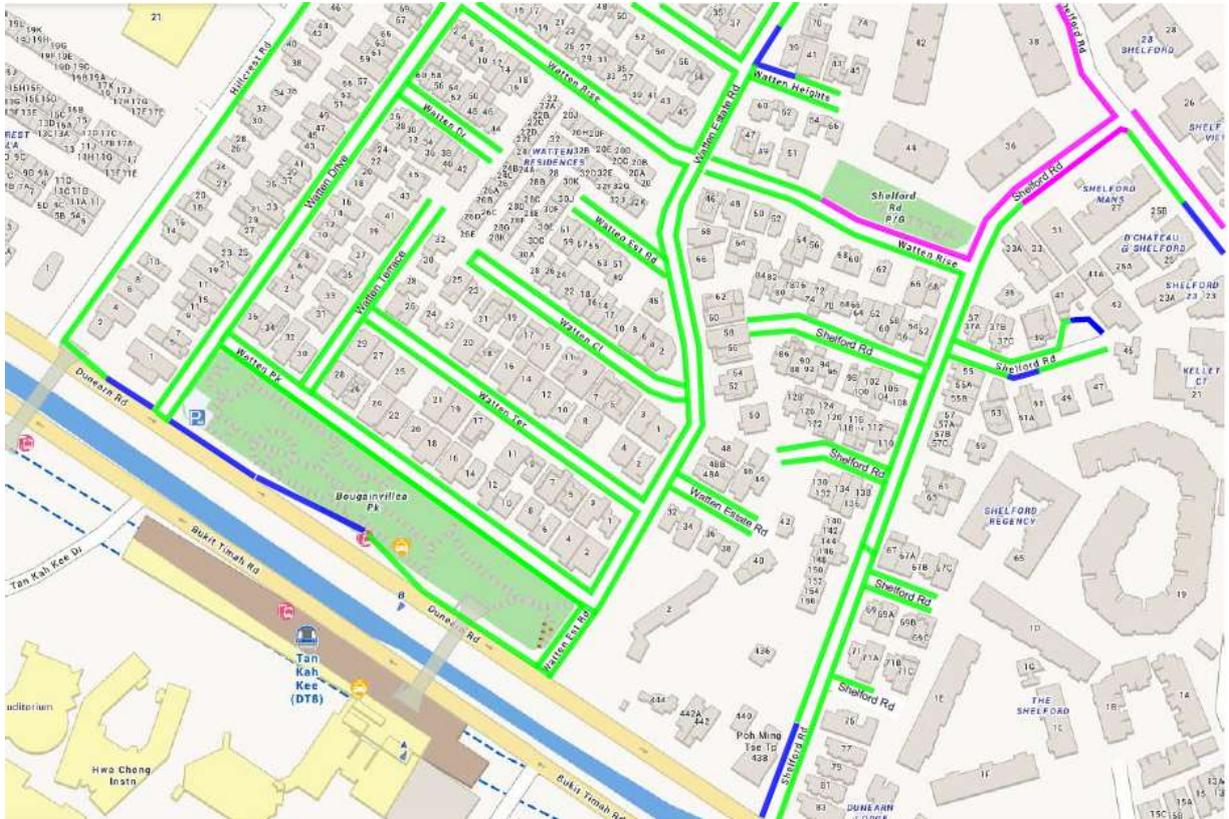
## Drain Conditions in Watten Estate

- Drain structure issues: deterioration of existing drains



# Annex B





**Legend**

- CATEGORY 1 - To be rebuilt; proposed to be Covered Drain/Culvert
- CATEGORY 2 - To be rebuilt; proposed to be Open Drain
- CATEGORY 3 - No need to rebuild; existing drain to be retained

## Public Engagement Plan

### Upon Tender Awarded:

- 1<sup>st</sup> letter and pamphlet (with FAQ) to inform residents of the drainage works.
- 2<sup>nd</sup> letter to carry out pre-construction survey.
- 3<sup>rd</sup> letter to send pre-construction survey report to residents for record & acknowledgement.

### Before construction commence (along specific streets):

- Our appointed contractor's Public Relations Officer (PRO) will engage and inform residents of each unit on actual schedule of construction and share information including whether trees fronting their house will be retained or felled, etc., and other coordination works with the residents.

### Completion of Drainage Works:

- Residents will be verbally updated when the work is completed.

*Notes: Pre-construction survey is to establish the conditions of the existing buildings and structure that are adjacent to our drainage upgrading works. This pre-construction survey report will be shared with the owner before the commencement of the drainage upgrading works.*