Zero incidents
Zero harm
Zero compromise

Keeping you **healthy** and **safe**, every day **at work**.

ESSENTIAL STANDARD no. 34

Grass cutting on Thames Water Estates

Thames Water

KEY MESSAGES

- **All sites where the cutting of grass on slopes is required must have a slope register**
- **The max permissible slope angle that may be cut using ride-on mowers is 40 degrees**
- **The use of ride-on or powered pedestrian mowers by lone-workers is prohibited**
- **The use of ride-on mowers on slopes in the wet or rain is prohibited**
- **The working environment needs to be checked prior to commencement of work and any hazards removed or marked**
- **If at any point the operator(s) feel the working environment is not safe to continue, STOP and inform line manager**

1. Introduction

The cutting of grass near to, or on slopes presents several risks to operators which will be aligned to the local working environment, these could include falls from height and working near water. In addition, working near to slopes presents a risk of getting too close to the edge where a 'runaway' or 'roll-over' situation could occur and working on slopes presents the obvious risk of rollover incidents.

Therefore, before undertaking any works ensure you have received the appropriate training for the task and equipment you are using, and that equipment is suitable for the activity using manufacturer guidelines and site slopes register.

Importantly a properly prepared safe system of work and the controls identified within in, that conforms to this essential Standard will allow the risks faced through using dangerous equipment to be as low as reasonably practicable

2. Hierarchy of Control Measures for use of Ride-on Mowers

LEVEL 1	**AVOID** use of ride-on mowers on sites • eliminate use through designating the entire site 'Zero Ride on Mower' • eliminate use through not allowing ride on mower cutting to any area with an unprotected drop off zone
LEVEL 2	**PREVENT** unsafe use of ride-on mowers • No ride-on mower to be used an any slope in excess of 40 degrees • through using permanent physical workplace controls to prevent edging violations • through using temporary equipment to prevent edging violations • All ride on to be fitted with inclinometers • Maintaining agreed buffer zones • Mowing is not to be undertaken in rain/wet conditions on slopes
LEVEL 3	**MITIGATE** • Lone working is prohibited when using Ride on Mowers • Personal Protective Equipment (TW five points to safety as a minimum) should be work for specific risks (i.e. working near unguarded water)

3. Mowing Operating Standards

- **Factor of Safety:** every ride-on mower will have a manufacturer recommended maximum permissible slope angle (MPSA) identified for its use. For use on Thames Water sites a further safety factor of minus 10% is used to identify the MPSA that Thames Water permits. **Mowing of slopes in excess of 40 degrees using a ride-on mower is prohibited.**

  For example – a model of ride-on mower may have a manufacturers MPSA of 60 degrees, however with a safety factor of minus applied, this comes to 54 degrees. This model would still not be permitted on slopes in excess of 40 degrees.

- **Equipment Selection:** all equipment selected for use must be aligned to the manufacturers guidelines and the area to be cut, ensuring any weight restrictions are identified and complied with. Where slopes are being cut, ensure the machine is safe to operate on the slope angle using the information identified in the site slope register and machine manufacturers information.

- **Training and Competence:** all operators must have received training on the selected equipment and be competent to operate in the identified conditions.

- **Hazard Marking:** working environment checks must be completed and all identified hazards either removed or marked by cutting with appropriate pedestrian operated equipment and / or strimmer and communicated to all team members prior to commencement of ride-on mowers.

- **Risk Assessment:** a dynamic risk assessment and pre-work survey assessment must be completed. Any additional risks to be appropriately controlled as necessary. Any concerns / uncontrolled risks should be raised to a line manager before works proceed.

- **Working near Water:** where employees are working within 3mtrs of unguarded water, a self-inflating 275kn life jacket is be worn. Lone working is prohibited.

- **Emergency Arrangements:** Ensure that the What3Words (www.what3words.com) for the site access point, normally the main gate, has been identified, displayed at the work location and communicated to all team members. A member of the working party must have access to a means of mobile communication in case of emergency and this should be checked for operational effectiveness such as power and battery power level prior to commencement of works activity.

- **Lone Working:** the use of ride-on mowers whilst lone working is prohibited. Team members should always ensure that all working party members are in sight of one other person at all times. For a two-person team, all works should cease should one person have to leave the work site for any reason.

- **Emergency Equipment:** first aid kits, fire extinguishers and spill kits should be immediately available at the work site.

- **Welfare:** location of welfare facilities must be identified and confirmed. Refreshments at the work location should be available.

- **Start of task briefing:** team leader should brief all working party members on the task ahead, asking pertinent questions to ensure the safe ways of working are known and understood by all.

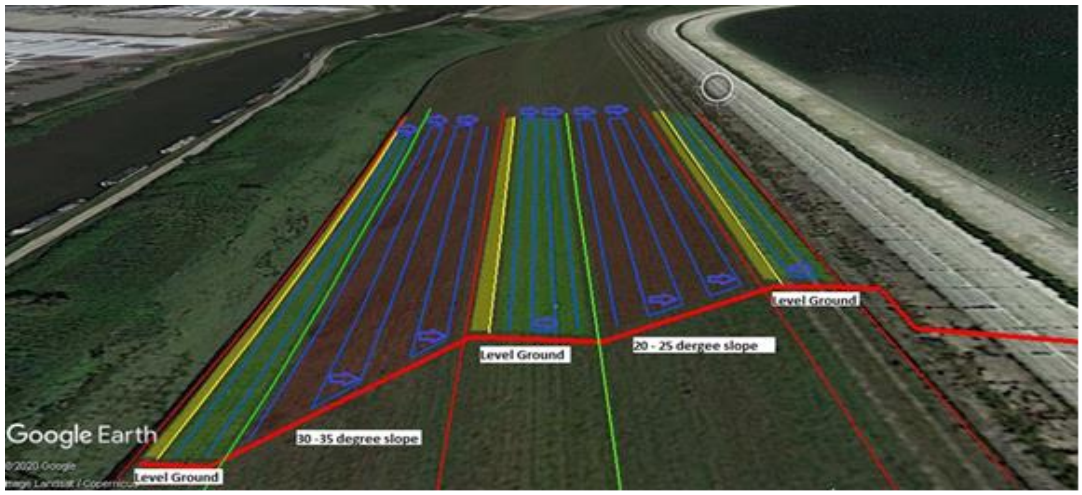
- **Checks and Records:** machinery and equipment are to be inspected and prepared for work, ensuring that a daily maintenance checklist is completed and recorded. Pre-use checks should also identify any defects which must be reported. Defective equipment must not be operated.

4. Hazard Zones Marking (Buffer zones)

A Safe System of Work (SSOW) must be prepared to identify the sloping and flat areas of the site to be maintained.

These identified areas must be split into different zones according to the reference diagram and tables below.

Red Line (RL)	This denotes the edge at which a slope meets level ground and is the most hazardous area within this type of environment.
Red Shading (RS)	This is the area to be cut that is sloped. Note: if greater than 40 degrees – the use of ride-on mowers is prohibited
Yellow Line (YL)	This denotes the forward edge of a 3mtr buffer zone from the edge of the slope (RL).
Yellow Shading (YB)	This is the 3mtr buffer zone. This area must be cut using appropriate pedestrian equipment prior to use of ride-on mower to provide a visual barrier.
Green Line (GL)	This denotes the toe of the bank, where the slope meets level ground.
Green Shading (GS)	This denotes the flat areas that present no specific hazard.
Blue Line (BL)	This line should identify the direction of travel for all mowing operations.



5. Risk Zoning

	Ride-on mower	Pedestrian mower
Slopes	**High Risk Area** • Where level ground meets a slope / drop off there must be a minimum three-metre-wide coned off safety zone set out along the top edge, this is to provide a high-level visual deterrent to stop ride on mowers entering the hazard zone. • Once the area has been cut using appropriate pedestrian mower or strimmer the safety area gets moved along. • Cones to be set out over a 300-metre area spaced at 10 metre intervals, this process to be undertaken manually on foot.	**Medium Risk Area** • Where level ground meets a slope / drop off, the embankments must have a minimum two-meter safety zone cut to highlight the hazard area prior to the remainder of the pedestrian work being undertaken
Flat ground	**Low Risk** • A minimum of a 3mtr safety zone is to be cut using strimmer around assets, fence lines and street furniture	**Low Risk** • A minimum of a 1mtr safety zone is to be cut using strimmer around assets, fence lines and street furniture

6. Cutting within risk zoned areas

(see Section 5 – Risk Zoning)

Low Risk (flat areas)	• The ride-on mower operator is to cut a line close to the edge of the cone demarked safety buffer zone using the cones as a visual guide to prevent them from going too close to the edge and then work back and forth ensuring all turning is inwards to ensure working away from the safety buffer zone and sloping area. • Work across the slope line turning inwards away from the slope. • At no point should the ride on machines enter the 3m safety buffer zone. • Once all cutting operations are complete ensure all machinery is kept away from the safety buffer zone. • Work in sections ensuring the safety buffer zone is cut and complete before commencing with ride on mower
Medium or High Risk (slopes)	• Ensure all site plans and slope measurements are available as slopes register. • Ensure all employees understand the slopes register and how it works in operation. • Ensure equipment safe operating requirements and safety documentation is provided to and understood by all machine operators. • Ensure equipment manufacturers information is used to identify equipment measurements for safe working on slopes and this is aligned to information within slopes register. • Ensure there are no other works being undertaken either above or below the working area. • Works are not to be undertaken in rain / wet conditions. • Employing the correct machinery for the gradient, works are to proceed from the toe of the bank in a back and forth direction ensuring all turning is done facing upwards to reduce the risk of machine overturn. • Do not cut over the brow of the slope as traversing back onto the slope may cause equipment overturn. • If operating a robotic mower, the operative should stand above or to the side of the machine, never work directly beneath the machine and observe operator safety instructions. Ensure no persons enter the zone beneath the mowing operation. If persons enter the zone beneath mowing operations work must cease until the zone is clear.

7. Protecting Thames Water Assets

- To provide a safety zone around Thames Water Assets such as buildings, paths, utilities, trees and any other obstacles a minimum 1m safety zone is to be cut using appropriate equipment such as pedestrian mower or strimmer which is to be selected aligned to area to be maintained and equipment manufacturers guidelines.
- Where a ride on mower is used the safety zone is to be increased to a minimum of 3m width.
- The width of this is to be measured by a pre-determined number of passes with the mower (dependant on the width of the pedestrian mower being used) or a 180-degree wide swarf using the strimmer.

8. Working Near Water

- When any work takes place near water, Essential Standard 03 - Working Over or Near Water must always be complied with.
- A self-inflating lifejacket must be worn with a minimum buoyancy of 275kn.
- Only company issued and inspected lifejackets to be worn by employees. Any damage or defects must be reported, and lifejacket taken out of use.
- Lone working is not permitted under any circumstances when working over or near unguarded water.

9. Emergencies and Contingencies

- All team leaders and operatives are to hold emergency first aid at work qualification.
- What3words should be available for the site and recorded at HQ and in the van on site.
- Lone working is not permitted at any time a powered mower (Ride on or Pedestrian) of any kind is being operated.

10. Ensuring Compliance

Work activities are to be regularly checked by an appointed Supervisor or Manager. The inspection should include a focus on the cut marks along the lip of any slope.

It will be evident as to how the area has been cut due to the following:

- A trimmer will provide a less level cut, and leave sporadic arisings
- A pedestrian powered mower will leave a rough cut with little arisings
- A ride-on mower will leave a very faint circular cut with a visible and constant arising discharge.