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**Monday 13th June 2011**

**1 hour**

**Mock SDME June 2011 - THE TIDE IS HIGH: Why is there a need to protect some of our coastline?**

**Section A - The Background**

**Question 1**

Use **Resource 1** to answer this question:

a) Which hard engineering coastal protection method shown has the longest lifespan? (1)

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b) Explain how some of the hard engineering coastal protection methods are more sustainable than others. (3)

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**Question 2**

Use **Resources 2** and your own knowledge to answer this question:

a) Describe the location of Happisburgh. (2)

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b) Explain why erosion has been greater at point Y than at point X (refer to photographic evidence). (4)

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**Section B - The Options**

**Question 3**

Use **Resource 3 & 4** to answer this question:

Explain why one stakeholder argues in favour of coastal protection at Happisburgh and why another argues against. (7)

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**Question 4**

Use **Resource 5 & 6** to answer this question:

Give two reasons to explain how soft engineering and managed retreat are more sustainable than hard engineering methods. (7)

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**Section C - The Decision**

**Question 5**

Use all of the resources, with particular reference to **Resources 7 & 8**, and your own knowledge to answer this question.

*Land and buildings in Happisburgh are at risk of being lost to coastal erosion. North Norfolk District Council must decide what its plans are for Happisburgh’s coastal protection in the short, medium and long term. Government funding for coastal protection has been cut so the council need to find an affordable and sustainable solution.*

**Option 1**

Replace the existing failing wooden groynes and revetments with new hard engineering methods of coastal protection in an attempt to ‘hold the line’ and protect houses at risk.

**Option 2**

Use a combination of soft engineering coastal protection methods to maintain the existing coastline in areas currently protected by wooden groynes and revetments. Over time allow these soft engineering methods to replace the groynes and revetments.

**Option 3**

Remove the existing wooden groynes and revetments to allow coastline retreat through managed realignment. Extend the Buy and Demolish pathfinder project to compulsorily purchase all buildings now at risk from erosion.

**Option 4**

Do nothing. Allow retreat through no active intervention. No compensation paid to homeowners who have to move out and pay for their own homes to be demolished.

TASK: Explain which option you think would provide Happisburgh with the most sustainable way of managing coastal erosion.

1. State your chosen option.
2. Give possible advantages and disadvantages of your chosen option.
3. Explain how your chosen option is more sustainable in the short, medium and long term.
4. For **one** of your rejected options give **two** reasons why you rejected it and **one** possible advantage of that option. (16)

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