2009

10- 5 Road Surveys

Colby College

Problems in Environmental Science course (Biology 493), Colby College

PROTOCOL FOR 10/5/09

LAND USE TEAMS

Car #1

Crew: Mike (driver), Jess, Rachael, Katie

Equipment:

Radio	Measuring wheel
Meterstick (x2)	Datasheets
Tape Measures	Clipboard
Watershed/Road maps	Clinometer

Directions

-Proceed out of Oakland on High Street (rt 137). Take a sharp left onto Town farm road at the bottom of the hill.

-Proceed South and survey every road stemming from Town Farm Rd between the point the road splits from 139 and the transfer station. The transfer station will be the last road you survey. You DO NOT have to survey Town Farm Rd itself, or count houses along town farm road.

-Include Summer Street in survey. Do NOT do South Gage Road.

Survey Procedures

Road Survey Instructions – Camp Road

1. **Take GPS readings of the road**
   - If the road is on the road map, take a GPS reading when the road enters the watershed (this could be the start of the road but not necessarily) to the point where the road leaves the watershed (or the end of the road). Most camp roads will be entirely within the watershed, so points at the beginning of the road and at the end of the road would be taken.
   - If the road is NOT on the road map, take GPS readings throughout the length of the road within the watershed. This will give us a general shape of the road.
2. **Measure the length of the road**
   - Reset the trip odometer at the start of the road within the watershed and drive to the end of the road or the point where the road leaves the watershed.
   - Record the trip odometer reading under road length.
3. **Measure the width of the road**
   - Using a walking wheel, measure the width of the road, including the shoulders of the road (*record under average width*).
4. **Estimate the slope of the road**
   - This is divided into two categories: slope (general) and slope (lake approach)

- Slope (general) measures the average slope of the entire road length within the watershed.
- Slope (lake approach) measures the slope of the road as it approaches the lake.
- Qualify the slope as steep, moderately steep, small incline, or flat for both categories.

5. **Tally the number of inaccessible lakefront driveways**
   - This is meant to make the on-shore house count from the road survey similar to the on-shore house count from the shoreline survey.
   - Because the driveways are inaccessible, there is no way to know how many houses are along the driveway. *Assume there is one house per inaccessible driveway*.
6. **Measure the crown using technique demonstrated in class**
7. **Describe ditch conditions (refer to information sheet)**
8. **Describe culvert conditions**
9. **Describe road surface conditions**
10. **Give road an overall condition rating based on the condition of the crown, ditches, culverts, and road surface.**

Road Survey Instructions – Non-Camp Road in Watershed

1. **Take GPS readings of the road**
   - Take a GPS reading when the road enters the watershed to the point where the road leaves the watershed. Look at given GPS points as a guide.

2. **Measure the length of the road**
   - Reset the trip odometer at the start of the road within the watershed and drive to the end of the road or where the road leaves the watershed.
   - Record the trip odometer reading under road length.

3. **Measure the width of the road**
   - Using a walking wheel, measure the width of the road, including the shoulders of the road (*record under average width*).

Road Survey Instructions – Problem Areas

1. **Record the road name and take a GPS reading of the location of the problem.**
2. **Describe location of problem in terms of miles from the start of the road (within watershed).**
3. **Identify problem area**
4. **Describe problem in summary section and address what needs to be done**
5. **Take picture of problem and record picture number**

PROTOCOL FOR 10/5/09

LAND USE TEAMS

Car #2

Crew: Ian (driver), Andy, Jennie

Equipment: Radio
Meterstick (x2)
Tape Measures
Watershed/Road maps
Measuring wheel
Datasheets
Clipboard
Clinometer

Directions

-Proceed out of Oakland on High Street (rt 137). Take a sharp left onto Town Farm road at the bottom of the hill

-Starting immediately after the transfer station, head South on Town Farm Road and survey every camp road or otherwise connected road that falls within the watershed (do not survey the transfer station road). You do not have to survey Town Farm Road itself.

-At end of Town Farm Road, turn right on Belgrade Road. Survey the end of East Side Trail (see instructions on marking point of entrance to watershed for camp roads), Stonyridge Drive, and Ridge Walk Drive to complete survey.

Survey Procedures

Road Survey Instructions – Camp Road

11. Take GPS readings of the road

- If the road is on the road map, take a GPS reading when the road enters the watershed (this could be the start of the road but not necessarily) to the point where the road leaves the watershed (or the end of the road). Most camp roads will be entirely within the watershed, so points at the beginning of the road and at the end of the road would be taken.
- If the road is NOT on the road map, take GPS readings throughout the length of the road within the watershed. This will give us a general shape of the road.

12. Measure the length of the road

- Reset the trip odometer at the start of the road within the watershed and drive to the end of the road or the point where the road leaves the watershed.
- Record the trip odometer reading under road length.

13. Measure the width of the road

- Using a walking wheel, measure the width of the road, including the shoulders of the road (*record under average width*).

14. Estimate the slope of the road

- This is divided into two categories: slope (general) and slope (lake approach)
- Slope (general) measures the average slope of the entire road length within the watershed.
- Slope (lake approach) measures the slope of the road as it approaches the lake.
- Qualify the slope as steep, moderately steep, small incline, or flat for both categories.

15. Tally the number of inaccessible lakefront driveways

- This is meant to make the on-shore house count from the road survey similar to the on-shore house count from the shoreline survey.
- Because the driveways are inaccessible, there is no way to know how many houses are along the driveway. *Assume there is one house per inaccessible driveway*.

16. Measure the crown using technique demonstrated in class
17. Describe ditch conditions (refer to information sheet)
18. Describe culvert conditions
19. Describe road surface conditions
20. Give road an overall condition rating based on the condition of the crown, ditches, culverts, and road surface.

Road Survey Instructions – Non-Camp Road in Watershed

4. Take GPS readings of the road

- Take a GPS reading when the road enters the watershed to the point where the road leaves the watershed. Look at given GPS points as a guide.

5. Measure the length of the road

- Reset the trip odometer at the start of the road within the watershed and drive to the end of the road or where the road leaves the watershed.
- Record the trip odometer reading under road length.

6. Measure the width of the road

- Using a walking wheel, measure the width of the road, including the shoulders of the road (*record under average width*).

Road Survey Instructions – Problem Areas

6. Record the road name and take a GPS reading of the location of the problem.
7. Describe location of problem in terms of miles from the start of the road (within watershed).
8. Identify problem area
9. Describe problem in summary section and address what needs to be done

10. Take picture of problem and record picture number

PROTOCOL FOR 10/5/09

LAND USE TEAMS

Car #3

Crew: Anders (driver), Jordan, Dave

Equipment: Radio
Meterstick (x2)
Tape Measures
Watershed/Road maps
Measuring wheel
Datasheets
Clipboard
Clinometer

Directions

-Proceed out of Oakland on Route 11 heading South. Turn Right on Taylor Woods Road. The watershed begins when the road straightens after bending right.
-Begin survey of all camp and noncamp roads (do not include Taylor Woods Road itself).
-At end of Taylor Woods Road, turn right onto Smithfield Road and continue survey of camp and noncamp roads branching off of Smithfield (do not include Smithfield itself).
-Finish survey after surveying Spiller Drive and Modin Way.
-Conduct shoreline survey of the milfoil cove (outlet to Great Pond).

Survey Procedures

Road Survey Instructions – Camp Road

21. Take GPS readings of the road

- If the road is on the road map, take a GPS reading when the road enters the watershed (this could be the start of the road but not necessarily) to the point where the road leaves the watershed (or the end of the road). Most camp roads will be entirely within the watershed, so points at the beginning of the road and at the end of the road would be taken.
- If the road is NOT on the road map, take GPS readings throughout the length of the road within the watershed. This will give us a general shape of the road.

22. Measure the length of the road

- Reset the trip odometer at the start of the road within the watershed and drive to the end of the road or the point where the road leaves the watershed.
- Record the trip odometer reading under road length.

23. Measure the width of the road

- Using a walking wheel, measure the width of the road, including the shoulders of the road (*record under average width*).

24. Estimate the slope of the road

- This is divided into two categories: slope (general) and slope (lake approach)
- Slope (general) measures the average slope of the entire road length within the watershed.
- Slope (lake approach) measures the slope of the road as it approaches the lake.
- Qualify the slope as steep, moderately steep, small incline, or flat for both categories.

25. Tally the number of inaccessible lakefront driveways

- This is meant to make the on-shore house count from the road survey similar to the on-shore house count from the shoreline survey.
- Because the driveways are inaccessible, there is no way to know how many houses are along the driveway. *Assume there is one house per inaccessible driveway*.

26. Measure the crown using technique demonstrated in class
27. Describe ditch conditions (refer to information sheet)
28. Describe culvert conditions
29. Describe road surface conditions
30. Give road an overall condition rating based on the condition of the crown, ditches, culverts, and road surface.

Road Survey Instructions – Non-Camp Road in Watershed

7. Take GPS readings of the road

- Take a GPS reading when the road enters the watershed to the point where the road leaves the watershed. Look at given GPS points as a guide.

8. Measure the length of the road

- Reset the trip odometer at the start of the road within the watershed and drive to the end of the road or where the road leaves the watershed.
- Record the trip odometer reading under road length.

9. Measure the width of the road

- Using a walking wheel, measure the width of the road, including the shoulders of the road (*record under average width*).

Road Survey Instructions – Problem Areas

11. Record the road name and take a GPS reading of the location of the problem.
12. Describe location of problem in terms of miles from the start of the road (within watershed).
13. Identify problem area
14. Describe problem in summary section and address what needs to be done
15. Take picture of problem and record picture number

PROTOCOL FOR 10/5/09

LAND USE TEAMS

Car #4

Crew: Russ (driver), Emily, Emma

Equipment: Radio
Meterstick (x2)
Tape Measures
Watershed/Road maps
Measuring wheel
Datasheets
Clipboard
Clinometer

Directions

- Proceed out of Oakland on Route 11 heading South. Turn Right on Taylor Woods Road. Turn right on Smithfield Road.
- Start survey immediately after Spiller Road on the left (do not include Spiller in survey).
- End survey when Smithfield Road exits the watershed about 0.7 miles beyond turnoff for McGrath Pond Road.

Survey Procedures

Road Survey Instructions – Camp Road

31. Take GPS readings of the road

- If the road is on the road map, take a GPS reading when the road enters the watershed (this could be the start of the road but not necessarily) to the point where the road leaves the watershed (or the end of the road). Most camp roads will be entirely within the watershed, so points at the beginning of the road and at the end of the road would be taken.
- If the road is NOT on the road map, take GPS readings throughout the length of the road within the watershed. This will give us a general shape of the road.

32. Measure the length of the road

- Reset the trip odometer at the start of the road within the watershed and drive to the end of the road or the point where the road leaves the watershed.
- Record the trip odometer reading under road length.

33. Measure the width of the road

- Using a walking wheel, measure the width of the road, including the shoulders of the road (*record under average width*).

34. Estimate the slope of the road

- This is divided into two categories: slope (general) and slope (lake approach)
- Slope (general) measures the average slope of the entire road length within the watershed.
- Slope (lake approach) measures the slope of the road as it approaches the lake.
- Qualify the slope as steep, moderately steep, small incline, or flat for both categories.

35. Tally the number of inaccessible lakefront driveways

- This is meant to make the on-shore house count from the road survey similar to the on-shore house count from the shoreline survey.
- Because the driveways are inaccessible, there is no way to know how many houses are along the driveway. *Assume there is one house per inaccessible driveway*.

36. Measure the crown using technique demonstrated in class

37. Describe ditch conditions (refer to information sheet)

38. Describe culvert conditions

39. Describe road surface conditions

40. Give road an overall condition rating based on the condition of the crown, ditches, culverts, and road surface.

Road Survey Instructions – Non-Camp Road in Watershed

10. Take GPS readings of the road

- Take a GPS reading when the road enters the watershed to the point where the road leaves the watershed. Look at given GPS points as a guide.

11. Measure the length of the road

- Reset the trip odometer at the start of the road within the watershed and drive to the end of the road or where the road leaves the watershed.
- Record the trip odometer reading under road length.

12. Measure the width of the road

- Using a walking wheel, measure the width of the road, including the shoulders of the road (*record under average width*).

Road Survey Instructions – Problem Areas

16. Record the road name and take a GPS reading of the location of the problem.

17. Describe location of problem in terms of miles from the start of the road (within watershed).

18. Identify problem area

19. Describe problem in summary section and address what needs to be done

20. Take picture of problem and record picture number

PROTOCOL FOR 10/5/09

LAND USE TEAMS

Car #5

Crew: Ben (driver), Sarah, Tracy

Equipment: Radio
Meterstick (x2)
Tape Measures
Watershed/Road maps
Measuring wheel
Datasheets
Clipboard
Clinometer

Directions

- Proceed out of Oakland on High Street (rt 137). Take a left on McGrath Pond Road.
- Start survey of all camp and noncamp roads branching from McGrath Pond Road (do not survey McGrath Pond Road itself).
- End survey when McGrath Pond Road intersects Route 11.

Survey Procedures

Road Survey Instructions – Camp Road

41. Take GPS readings of the road

- If the road is on the road map, take a GPS reading when the road enters the watershed (this could be the start of the road but not necessarily) to the point where the road leaves the watershed (or the end of the road). Most camp roads will be entirely within the watershed, so points at the beginning of the road and at the end of the road would be taken.
- If the road is NOT on the road map, take GPS readings throughout the length of the road within the watershed. This will give us a general shape of the road.

42. Measure the length of the road

- Reset the trip odometer at the start of the road within the watershed and drive to the end of the road or the point where the road leaves the watershed.
- Record the trip odometer reading under road length.

43. Measure the width of the road

- Using a walking wheel, measure the width of the road, including the shoulders of the road (*record under average width*).

44. Estimate the slope of the road

- This is divided into two categories: slope (general) and slope (lake approach)
- Slope (general) measures the average slope of the entire road length within the watershed.
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- Qualify the slope as steep, moderately steep, small incline, or flat for both categories.

45. Tally the number of inaccessible lakefront driveways
- This is meant to make the on-shore house count from the road survey similar to the on-shore house count from the shoreline survey.
- Because the driveways are inaccessible, there is no way to know how many houses are along the driveway. *Assume there is one house per inaccessible driveway*.

46. Measure the crown using technique demonstrated in class
47. Describe ditch conditions (refer to information sheet)
48. Describe culvert conditions
49. Describe road surface conditions
50. Give road an overall condition rating based on the condition of the crown, ditches, culverts, and road surface.

Road Survey Instructions – Non-Camp Road in Watershed

13. Take GPS readings of the road
- Take a GPS reading when the road enters the watershed to the point where the road leaves the watershed. Look at given GPS points as a guide.

14. Measure the length of the road
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- Record the trip odometer reading under road length.

15. Measure the width of the road
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Road Survey Instructions – Problem Areas

21. Record the road name and take a GPS reading of the location of the problem.
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