

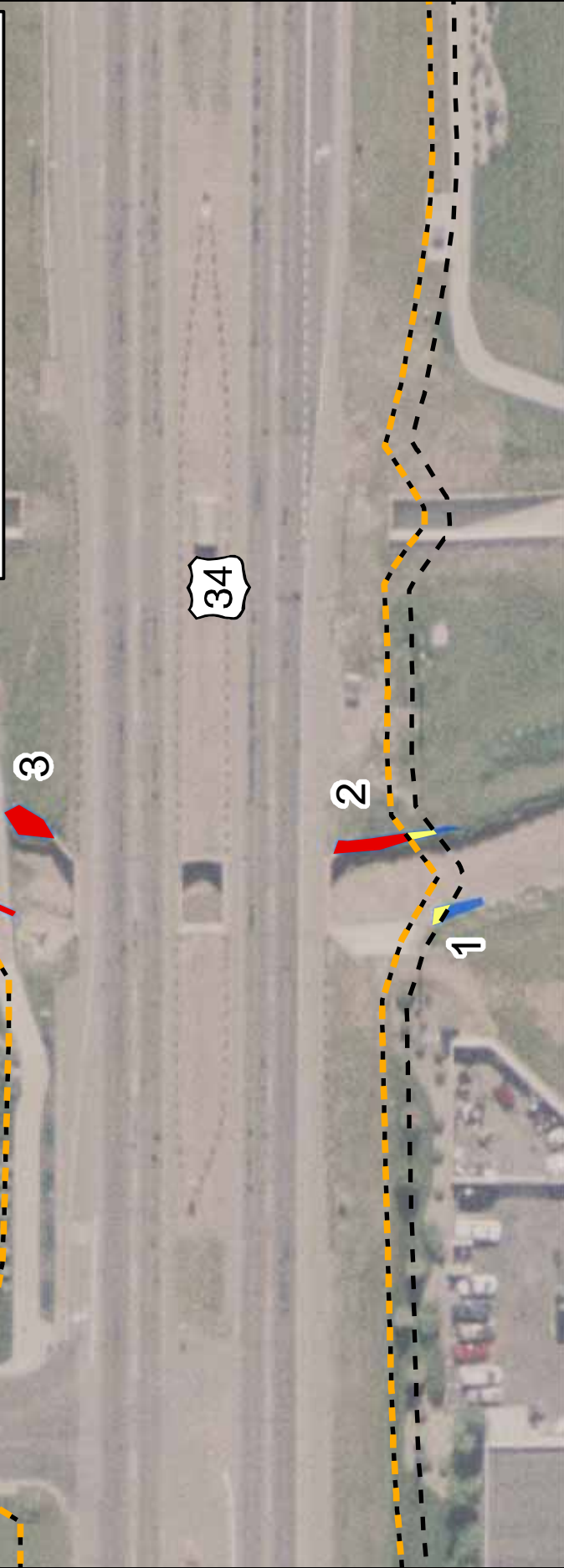
Appendix F. Wetland Delineation and Impact Information

Appendix F. Wetland Delineation and Impact Information

- Wetland Delineation and Impacts Maps Exhibits 1-4
- Field Data Forms Routine Wetland Delineation for Wetlands 1-10

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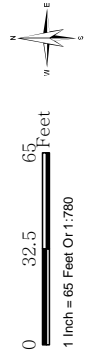
| Site | Location | Area (SQ Feet) | Permanent Impacts (SQ Feet) | Temporary Impacts (SQ Feet) |
|------|---|----------------|-----------------------------|-----------------------------|
| 1 | SW side of Greeley & Loveland Ditch East of Cheyenne Avenue | 103 | None | 31 |
| 2 | SE side of Greeley & Loveland Ditch East of Cheyenne Avenue | 183 | 136 | 27 |
| 3 | NE side of Greeley & Loveland Ditch East of Cheyenne Avenue | 147 | 147 | None |
| 4 | NW side of Greeley & Loveland Ditch East of Cheyenne Avenue | 231 | 56 | 52 |
| 5 | NE side of Greeley & Loveland Ditch East of Cheyenne Avenue | 272 | None | None |



Cheyenne Ave

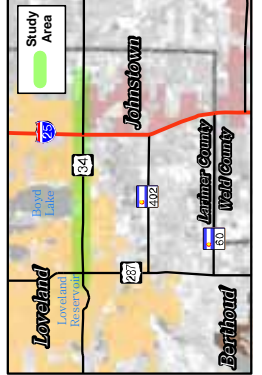


Exhibit F-1 Wetland Delineations and Impacts



SOURCE: 2005 1/2-foot pixel resolution aerial photography provided by City of Loveland. Wetland information provided by CDOT.

Map created February 23, 2007.

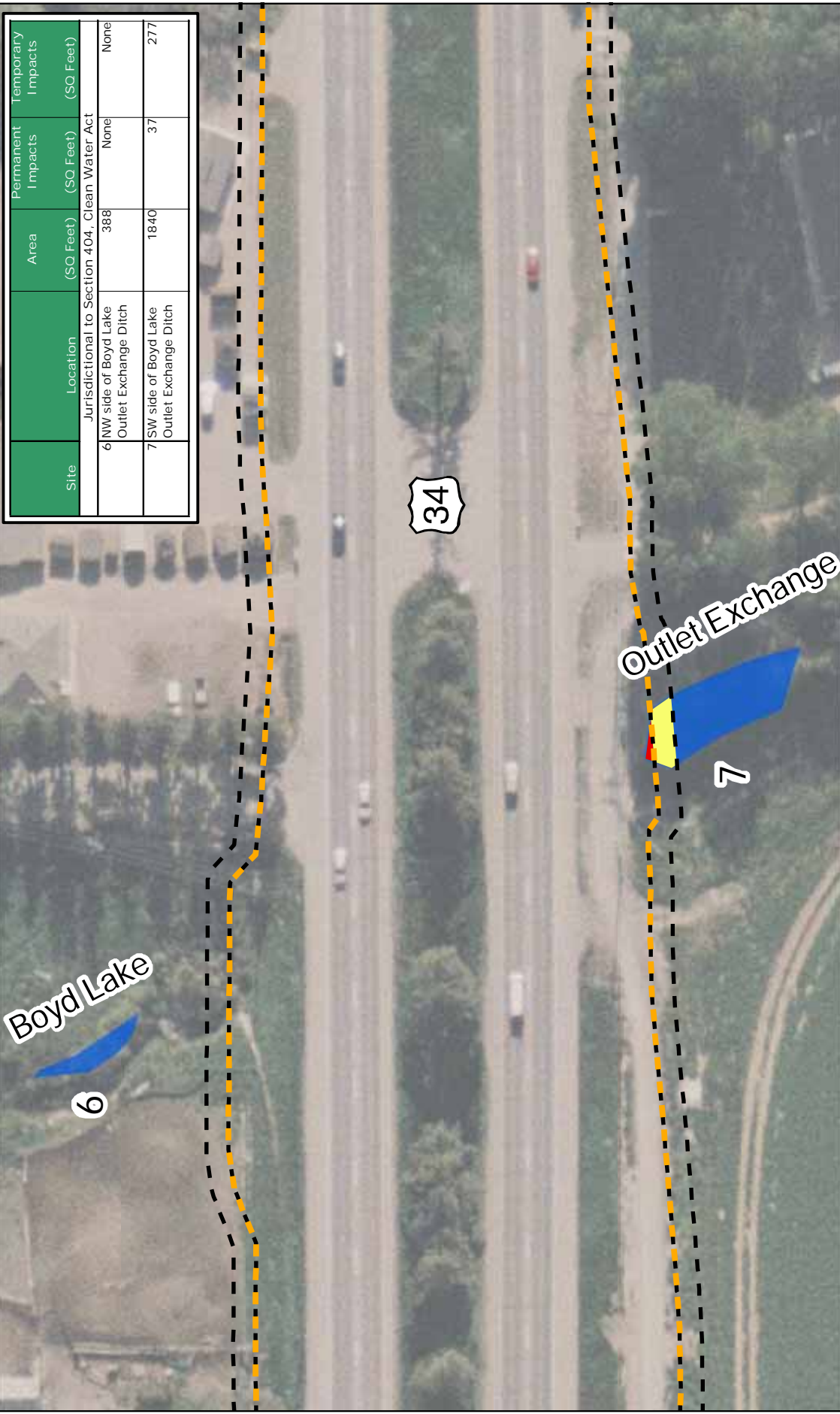


- Legend**
- Wetlands
 - Permanent Wetland Impacts
 - Temporary Wetland Impacts
 - Toe Of Fill Line
 - 10ft Buffer of Toe of Fill Line

Map Document: US 287 Wetland Assessment - Wetland Delineation - 2/23/07 - 2:14:30 PM

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| Site | Location | Area (SQ Feet) | Permanent Impacts (SQ Feet) | Temporary Impacts (SQ Feet) |
|------|--|----------------|-----------------------------|-----------------------------|
| | Jurisdictional to Section 404, Clean Water Act | 388 | None | None |
| 6 | NW side of Boyd Lake Outlet Exchange Ditch | | | |
| 7 | SW side of Boyd Lake Outlet Exchange Ditch | 1840 | 37 | 277 |



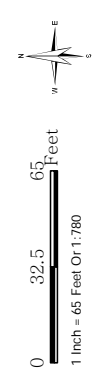
Boyd Lake
6

Outlet Exchange
7

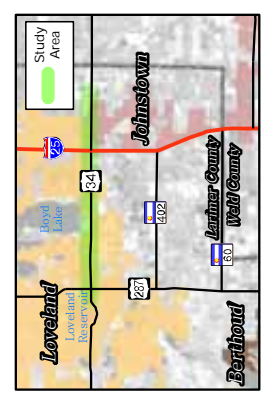
34



Exhibit F-2
Wetland Delineations and Impacts



SOURCE: 2005 1/2 foot pixel resolution aerial photography provided by City of Loveland. Wetland information provided by CDOT.
Map created February 23, 2007.



- Legend**
- Wetlands
 - Permanent Wetland Impacts
 - Temporary Wetland Impacts
 - Toe Of Fill Line
 - 10ft Buffer of Toe of Fill Line

Map Document: C:\Projects\Wetland\MapDocs\WetlandMap.mxd Date: 02/23/07 10:51:53 AM

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Field Data Form
Routine Wetland Delineation

| | |
|--|--|
| Project/Site <u>US 34-US 287 to LCR 3 EA</u> Applicant/Owner <u>CDOT Region 4</u> Investigator <u>R. Pierce</u> | Date <u>5/30/06</u> County <u>Larimer</u> State <u>CO</u> |
| Do normal circumstances exist at the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed ("atypical situation")? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential "problem area"? <input type="radio"/> Yes <input checked="" type="radio"/> No | Community ID <u>7</u> Transect # <u>—</u> Site/Plot # <u>1</u> Photo # <u>—</u> |
| Location Description: <u>Wetland sampling site south of US 34, west bank of Loveland and Greeley Canal. Section 18, T5N, R68W</u> | |
| Plan Sheet # <u> </u> | |

VEGETATION

| Plant Species | Layer | Rating | Pct | Plant Species | Layer | Rating | Pct |
|--------------------------------|----------|--------------|------------|---------------|-------|--------|-------|
| 1. <u>Phalaris arundinacea</u> | <u>H</u> | <u>FACW+</u> | <u>95%</u> | 9. _____ | _____ | _____ | _____ |
| 2. <u>Carex emoryi</u> | <u>H</u> | <u>OBL</u> | <u>5%</u> | 10. _____ | _____ | _____ | _____ |
| 3. _____ | _____ | _____ | _____ | 11. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ | 12. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ | 13. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ | 14. _____ | _____ | _____ | _____ |
| 7. _____ | _____ | _____ | _____ | 15. _____ | _____ | _____ | _____ |
| 8. _____ | _____ | _____ | _____ | 16. _____ | _____ | _____ | _____ |

Percent Dominant Species that are Fac, FacW, or Obl 100%

Remarks: Adjacent upland veg. is EQAR, mowed BRIN, and COAR. Abrupt border between WL and upland.

HYDROLOGY

| | |
|---|---|
| <u>Recorded Data</u> ___ Stream, lake, tide gage ___ Aerial photograph ___ Other (explain) <input checked="" type="checkbox"/> No recorded data available | <u>Wetland Hydrology Indicators</u> Primary: ___ Inundated ___ Saturated in upper 12 inches ___ Water marks ___ Drift lines ___ Sediment deposits ___ Drainage patterns Secondary: ___ Oxidized root channels in upper 12 inches ___ Water-stained leaves ___ Local soil survey data <input checked="" type="checkbox"/> FAC-neutral test <u>2:0</u> ___ Other (explain below) |
| <u>Field Observations</u> Depth of surface water: _____ (in.) Depth to free water in pit: _____ (in.) Depth to saturated soil: _____ (in.) <u>(No pits)</u> | Remarks: <u>Flowing water in ditch fluctuates but is significant.</u> |

SOILS

| Map Unit Name (series, phase) <u>Nunn clay loam</u> | | | | Drainage Class: <u>SPD → WD</u> | |
|---|---------|-------------------------------|--------------------------------|---|---|
| Taxonomy (subgroup) _____ | | | | Map type confirmed? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Profile Description | | | | | |
| Depth (inches) | Horizon | Matrix Color (Munsell, moist) | Mottle Colors (Munsell, moist) | Mottles Qty./Size/Contrast* | Soil Texture, Structure Concretions, etc. |
| _____ | _____ | _____ | _____ | ____/____/____ | _____ |
| _____ | _____ | _____ | _____ | ____/____/____ | _____ |
| _____ | _____ | _____ | _____ | ____/____/____ | _____ |
| _____ | _____ | _____ | _____ | ____/____/____ | _____ |
| _____ | _____ | _____ | _____ | ____/____/____ | _____ |

*Quantity: f=few (<2%), c=common (2-20%), or m=many (>20%) / Size: f=fine (<5mm), m=medium (5-15mm), or c=coarse (>15mm) / Contrast: f=faint, d=distinct, or p=prominent.

| | |
|--|---|
| Hydric Soil Indicators | |
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions present |
| <input type="checkbox"/> Histic epipedon | <input type="checkbox"/> High organic content in surface layer of sandy soils |
| <input type="checkbox"/> Sulfidic odor | <input type="checkbox"/> Organic streaking in sandy soils |
| <input type="checkbox"/> Aquic moisture regime | <input type="checkbox"/> Listed on local hydric soils listing |
| <input type="checkbox"/> Reducing conditions present | <input type="checkbox"/> Listed on national hydric soils listing |
| <input type="checkbox"/> Gleyed or low-chroma colors | <input checked="" type="checkbox"/> Other (explain below) |

Remarks: Abrupt border w/ all FACW + OBL species.
Typical Front Range ditch habitat.

WETLAND DETERMINATION

| | | |
|---|--|---|
| Wetland vegetation present? | <input checked="" type="radio"/> Yes <input type="radio"/> No | Is the sampling point within a wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No |
| Wetland hydrology present? | <input checked="" type="radio"/> Yes <input type="radio"/> No | |
| Hydric soils present? | <input checked="" type="radio"/> Yes <input type="radio"/> No | |
| Wetland Functions, Values* | | |
| <input type="checkbox"/> Groundwater recharge, discharge | <input type="checkbox"/> Threatened, endangered species concerns | |
| <input type="checkbox"/> Floodflow alteration | <input type="checkbox"/> Recreation | |
| <input checked="" type="checkbox"/> Sediment, toxin retention | <input type="checkbox"/> Educational, scientific value | |
| <input type="checkbox"/> Nutrient removal, transformation | <input type="checkbox"/> Uniqueness, heritage value | |
| <input type="checkbox"/> Production export | <input type="checkbox"/> Visual quality, aesthetics | |
| <input type="checkbox"/> Wildlife habitat, corridor | <input type="checkbox"/> Economic benefits | |
| <input type="checkbox"/> Fish, shellfish habitat | <input type="checkbox"/> Other (explain) | |
| <input checked="" type="checkbox"/> Streambank stabilization | | |

*L = low, M = medium, H = high rating.

Remarks: Same as Wetlands 4, 5, and 6

Field Data Form
Routine Wetland Delineation

| | |
|--|--|
| Project/Site <u>US 3A-US 287 to LCR 3 EA</u> Applicant/Owner <u>CDOT Region 4</u> Investigator <u>R. Pierce</u> | Date <u>5/30/06</u> County <u>Larimer</u> State <u>CO</u> |
| Do normal circumstances exist at the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed ("atypical situation")? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential "problem area"? <input type="radio"/> Yes <input checked="" type="radio"/> No | Community ID <u>6</u> Transect # <u>—</u> Site/Plot # <u>1</u> Photo # <u>—</u> |
| Location Description: <u>Wetland south of US 3A east bank of Loveland Greeley canal. Narrow strip. Section 18, T5N, R68W</u> | |
| Plan Sheet # <u> </u> | |

VEGETATION

| Plant Species | Layer | Rating | Pct | Plant Species | Layer | Rating | Pct |
|--------------------------------|----------|--------------|------------|---------------|-------|--------|-------|
| 1. <u>Phalaris arundinacea</u> | <u>H</u> | <u>FACW+</u> | <u>90%</u> | 9. _____ | _____ | _____ | _____ |
| 2. <u>Carex emoryi</u> | <u>H</u> | <u>OBL</u> | <u>5%</u> | 10. _____ | _____ | _____ | _____ |
| 3. <u>Asclepias speciosa</u> | <u>H</u> | <u>FAC</u> | <u>5%</u> | 11. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ | 12. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ | 13. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ | 14. _____ | _____ | _____ | _____ |
| 7. _____ | _____ | _____ | _____ | 15. _____ | _____ | _____ | _____ |
| 8. _____ | _____ | _____ | _____ | 16. _____ | _____ | _____ | _____ |

Percent Dominant Species that are Fac, FacW, or Obl 100%

Remarks: Below at H₂O level PHAR dominated. Above is CAEM. Adjacent veg. is mowed BRIN and EQAR

HYDROLOGY

| | |
|--|---|
| <u>Recorded Data</u> <input type="checkbox"/> Stream, lake, tide gage <input type="checkbox"/> Aerial photograph <input type="checkbox"/> Other (explain) <input checked="" type="checkbox"/> No recorded data available | <u>Wetland Hydrology Indicators</u> Primary: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in upper 12 inches <input type="checkbox"/> Water marks <input type="checkbox"/> Drift lines <input type="checkbox"/> Sediment deposits <input type="checkbox"/> Drainage patterns Secondary: <input type="checkbox"/> Oxidized root channels in upper 12 inches <input type="checkbox"/> Water-stained leaves <input type="checkbox"/> Local soil survey data <input checked="" type="checkbox"/> FAC-neutral test 2:0 <input checked="" type="checkbox"/> Other (explain below) |
| <u>Field Observations</u> Depth of surface water: _____ (in.) Depth to free water in pit: _____ (in.) Depth to saturated soil: _____ (in.) (No pits) | Remarks: <u>Wetland strip located on bank of ditch that flows frequently. Hydrology was present.</u> |

SOILS

Map Unit Name (series, phase) Nunn clay loam Drainage Class: SPD → WD
 Taxonomy (subgroup) _____ Map type confirmed? Yes No

Profile Description

| Depth (inches) | Horizon | Matrix Color (Munsell, moist) | Mottle Colors (Munsell, moist) | Mottles Qty./Size/Contrast* | Soil Texture, Structure Concretions, etc. |
|----------------|---------|-------------------------------|--------------------------------|-----------------------------|---|
| | | | | / / | |
| | | | | / / | |
| | | | | / / | |

*Quantity: f=few (<2%), c=common (2-20%), or m=many (>20%) / Size: f=fine (<5mm), m=medium (5-15mm), or c=coarse (>15mm) / Contrast: f=faint, d=distinct, or p=prominent.

Hydric Soil Indicators

| | |
|--|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions present |
| <input type="checkbox"/> Histic epipedon | <input type="checkbox"/> High organic content in surface layer of sandy soils |
| <input type="checkbox"/> Sulfidic odor | <input type="checkbox"/> Organic streaking in sandy soils |
| <input type="checkbox"/> Aquic moisture regime | <input type="checkbox"/> Listed on local hydric soils listing |
| <input type="checkbox"/> Reducing conditions present | <input type="checkbox"/> Listed on national hydric soils listing |
| <input type="checkbox"/> Gleyed or low-chroma colors | <input checked="" type="checkbox"/> Other (explain below) |

Remarks: Abrupt boundary of OBL E. FACw + species w/ small amount of milkweed (FAC) along edge. Soils assumed.

WETLAND DETERMINATION

| | |
|---|---|
| Wetland vegetation present? <input checked="" type="radio"/> Yes <input type="radio"/> No | Is the sampling point within a wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No |
| Wetland hydrology present? <input checked="" type="radio"/> Yes <input type="radio"/> No | |
| Hydric soils present? <input checked="" type="radio"/> Yes <input type="radio"/> No | |

Wetland Functions, Values*

| | |
|--|---|
| <input checked="" type="checkbox"/> Groundwater recharge, discharge | <input checked="" type="checkbox"/> Threatened, endangered species concerns |
| <input checked="" type="checkbox"/> Floodflow alteration | <input checked="" type="checkbox"/> Recreation |
| <input checked="" type="checkbox"/> Sediment, toxin retention | <input checked="" type="checkbox"/> Educational, scientific value |
| <input checked="" type="checkbox"/> Nutrient removal, transformation | <input checked="" type="checkbox"/> Uniqueness, heritage value |
| <input checked="" type="checkbox"/> Production export | <input checked="" type="checkbox"/> Visual quality, aesthetics |
| <input checked="" type="checkbox"/> Wildlife habitat, corridor | <input checked="" type="checkbox"/> Economic benefits |
| <input checked="" type="checkbox"/> Fish, shellfish habitat | <input type="checkbox"/> Other (explain) |
| <input checked="" type="checkbox"/> Streambank stabilization | |

*L = low, M = medium, H = high rating.

Remarks: Same as Wetlands 4 and 5.

Field Data Form
Routine Wetland Delineation

| | |
|--|-----------------------|
| Project/Site <u>US 34-US 287 to LCR 3 EA</u> | Date <u>5/30/06</u> |
| Applicant/Owner <u>CDOT Region 4</u> | County <u>Larimer</u> |
| Investigator <u>R. Pierce</u> | State <u>CO</u> |
| Do normal circumstances exist at the site? <input checked="" type="radio"/> Yes <input type="radio"/> No | Community ID <u>4</u> |
| Is the site significantly disturbed ("atypical situation")? <input checked="" type="radio"/> Yes <input type="radio"/> No | Transect # <u>—</u> |
| Is the area a potential "problem area"? <input checked="" type="radio"/> Yes <input type="radio"/> No | Site/Plot # <u>1</u> |
| | Photo # <u>—</u> |
| Location Description: <u>WL sample site along Loveland Greeley canal just north of US 34 and east of N. Boise Ave. East bank of ditch. Sec. 7, T5N, R68W</u> | |
| | Plan Sheet # <u>—</u> |

VEGETATION

| Plant Species | Layer | Rating | Pct | Plant Species | Layer | Rating | Pct |
|--------------------------------|----------|--------------|------------|---------------|-------|--------|-----|
| 1. <u>Phalaris arundinacea</u> | <u>H</u> | <u>FACW+</u> | <u>40%</u> | 9. | | | |
| 2. <u>Carex emoryi</u> | <u>H</u> | <u>OBL</u> | <u>60%</u> | 10. | | | |
| 3. | | | | 11. | | | |
| 4. | | | | 12. | | | |
| 5. | | | | 13. | | | |
| 6. | | | | 14. | | | |
| 7. | | | | 15. | | | |
| 8. | | | | 16. | | | |

Percent Dominant Species that are Fac, FacW, or Obl 100%

Remarks: Abrupt boundary between CAEM and Bromus inermis. PHAR along H2O edge and CAEM above.

HYDROLOGY

| | |
|---|--|
| <p><u>—</u> Recorded Data</p> <p><u>—</u> Stream, lake, tide gage</p> <p><u>—</u> Aerial photograph</p> <p><u>—</u> Other (explain)</p> <p><input checked="" type="checkbox"/> No recorded data available</p> | <p>Wetland Hydrology Indicators</p> <p>Primary:</p> <p><u>—</u> Inundated</p> <p><u>—</u> Saturated in upper 12 inches</p> <p><input checked="" type="checkbox"/> Water marks</p> <p><u>—</u> Drift lines</p> <p><u>—</u> Sediment deposits</p> <p><u>—</u> Drainage patterns</p> <p>Secondary:</p> <p><u>—</u> Oxidized root channels in upper 12 inches</p> <p><u>—</u> Water-stained leaves</p> <p><u>—</u> Local soil survey data</p> <p><input checked="" type="checkbox"/> FAC-neutral test <u>2:0</u></p> <p><u>—</u> Other (explain below)</p> |
| <p>Field Observations</p> <p>Depth of surface water: <u>—</u> (in.)</p> <p>Depth to free water in pit: <u>—</u> (in.)</p> <p>Depth to saturated soil: <u>—</u> (in.)</p> <p><u>No pit</u></p> | <p>Remarks: <u>Surface water w/in ditch adj. to WL. No pit dug.</u></p> |

SOILS

| Map Unit Name (series, phase) <u>Nunn clay loam</u> | | Drainage Class: <u>SPD</u> | | | |
|---|---------|---|--------------------------------|-----------------------------|---|
| Taxonomy (subgroup) _____ | | Map type confirmed? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | |
| Profile Description | | | | | |
| Depth (inches) | Horizon | Matrix Color (Munsell, moist) | Mottle Colors (Munsell, moist) | Mottles Qty./Size/Contrast* | Soil Texture, Structure Concretions, etc. |
| _____ | _____ | _____ | _____ | / / | _____ |
| _____ | _____ | _____ | _____ | / / | _____ |
| _____ | _____ | _____ | _____ | / / | _____ |
| _____ | _____ | _____ | _____ | / / | _____ |
| _____ | _____ | _____ | _____ | / / | _____ |

*Quantity: f=few (<2%), c=common (2-20%), or m=many (>20%) / Size: f=fine (<5mm), m=medium (5-15mm), or c=coarse (>15mm) / Contrast: f=faint, d=distinct, or p=prominent.

| | |
|---|--|
| Hydric Soil Indicators | |
| <input type="checkbox"/> Histosol <input type="checkbox"/> Histic epipedon <input type="checkbox"/> Sulfidic odor <input type="checkbox"/> Aquic moisture regime <input type="checkbox"/> Reducing conditions present <input type="checkbox"/> Gleyed or low-chroma colors | <input type="checkbox"/> Concretions present <input type="checkbox"/> High organic content in surface layer of sandy soils <input type="checkbox"/> Organic streaking in sandy soils <input type="checkbox"/> Listed on local hydric soils listing <input type="checkbox"/> Listed on national hydric soils listing <input checked="" type="checkbox"/> Other (explain below) |

Remarks: Hydric soils assumed - FACW & OBL species only and abrupt boundary

WETLAND DETERMINATION

| | | |
|--|---|--|
| Wetland vegetation present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the sampling point within a wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Wetland hydrology present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Hydric soils present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Functions, Values* | | |
| <input type="checkbox"/> Groundwater recharge, discharge <input type="checkbox"/> Floodflow alteration <input checked="" type="checkbox"/> Sediment, toxin retention <input type="checkbox"/> Nutrient removal, transformation <input type="checkbox"/> Production export <input type="checkbox"/> Wildlife habitat, corridor <input type="checkbox"/> Fish, shellfish habitat <input checked="" type="checkbox"/> Streambank stabilization | <input type="checkbox"/> Threatened, endangered species concerns <input type="checkbox"/> Recreation <input type="checkbox"/> Educational, scientific value <input type="checkbox"/> Uniqueness, heritage value <input type="checkbox"/> Visual quality, aesthetics <input type="checkbox"/> Economic benefits <input type="checkbox"/> Other (explain) | *L = low, M = medium, H = high rating. |
| Remarks: <u>Wetland traps sediments & pollutants coming off highway and landscaped areas. Vegetation along ditch providing stabilization.</u> | | |

Field Data Form
Routine Wetland Delineation

| | |
|--|--|
| Project/Site <u>US 34 - US 287 to LCR 3 EA</u> Applicant/Owner <u>CDOT Region 4</u> Investigator <u>R. Pierce</u> | Date <u>5/30/06</u> County <u>Larimer</u> State <u>CO</u> |
| Do normal circumstances exist at the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed ("atypical situation")? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential "problem area"? <input type="radio"/> Yes <input checked="" type="radio"/> No | Community ID <u>5</u> Transect # <u>—</u> Site/Plot # <u>1</u> Photo # <u>—</u> |
| Location Description: <u>WL site along Loveland Greeley Canal, north of US 34 and on west bank of ditch. Narrow strip of WL. Sec 7, T5N, R68W</u> | |
| Plan Sheet # <u> </u> | |

VEGETATION

| Plant Species | Layer | Rating | Pct | Plant Species | Layer | Rating | Pct |
|--------------------------------|----------|--------------|------------|---------------|-------|--------|-------|
| 1. <u>Phalaris arundinacea</u> | <u>H</u> | <u>FACW+</u> | <u>80%</u> | 9. _____ | _____ | _____ | _____ |
| 2. <u>Carex emoryi</u> | <u>H</u> | <u>OBL</u> | <u>20%</u> | 10. _____ | _____ | _____ | _____ |
| 3. _____ | _____ | _____ | _____ | 11. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ | 12. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ | 13. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ | 14. _____ | _____ | _____ | _____ |
| 7. _____ | _____ | _____ | _____ | 15. _____ | _____ | _____ | _____ |
| 8. _____ | _____ | _____ | _____ | 16. _____ | _____ | _____ | _____ |

Percent Dominant Species that are Fac, FacW, or Obl 100%

Remarks: PHAR along H₂O edge & some CAEM above & under pedestrian bridge spanning ditch.

HYDROLOGY

| | |
|--|---|
| <u>Recorded Data</u> <input type="checkbox"/> Stream, lake, tide gage <input type="checkbox"/> Aerial photograph <input type="checkbox"/> Other (explain) <input checked="" type="checkbox"/> No recorded data available | <u>Wetland Hydrology Indicators</u> Primary: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in upper 12 inches <input checked="" type="checkbox"/> Water marks <input type="checkbox"/> Drift lines <input type="checkbox"/> Sediment deposits <input type="checkbox"/> Drainage patterns Secondary: <input type="checkbox"/> Oxidized root channels in upper 12 inches <input type="checkbox"/> Water-stained leaves <input type="checkbox"/> Local soil survey data <input checked="" type="checkbox"/> FAC-neutral test 2:1 <input type="checkbox"/> Other (explain below) |
| <u>Field Observations</u> Depth of surface water: _____ (in.) Depth to free water in pit: _____ (in.) Depth to saturated soil: _____ (in.) <u>No pit</u> | Remarks: <u>Water marks along bank above existing H₂O-indicating H₂O levels were ↑.</u> |

SOILS

Map Unit Name (series, phase) Nunn clay loam Drainage Class: SPD
 Taxonomy (subgroup) _____ Map type confirmed? Yes No

Profile Description

| Depth (inches) | Horizon | Matrix Color (Munsell, moist) | Mottle Colors (Munsell, moist) | Mottles Qty./Size/Contrast* | Soil Texture, Structure Concretions, etc. |
|----------------|---------|-------------------------------|--------------------------------|-----------------------------|---|
| _____ | _____ | _____ | _____ | / / | _____ |
| _____ | _____ | _____ | _____ | / / | _____ |
| _____ | _____ | _____ | _____ | / / | _____ |
| _____ | _____ | _____ | _____ | / / | _____ |
| _____ | _____ | _____ | _____ | / / | _____ |

*Quantity: f=few (<2%), c=common (2-20%), or m=many (>20%) / Size: f=fine (<5mm), m=medium (5-15mm), or c=coarse (>15mm) / Contrast: f=faint, d=distinct, or p=prominent.

Hydric Soil Indicators

| | |
|--|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions present |
| <input type="checkbox"/> Histic epipedon | <input type="checkbox"/> High organic content in surface layer of sandy soils |
| <input type="checkbox"/> Sulfidic odor | <input type="checkbox"/> Organic streaking in sandy soils |
| <input type="checkbox"/> Aquic moisture regime | <input type="checkbox"/> Listed on local hydric soils listing |
| <input type="checkbox"/> Reducing conditions present | <input type="checkbox"/> Listed on national hydric soils listing |
| <input type="checkbox"/> Gleyed or low-chroma colors | <input checked="" type="checkbox"/> Other (explain below) |

Remarks: No pit dug. All veg. FACW & OBL w/ abrupt border so soils assumed.

WETLAND DETERMINATION

| | |
|---|---|
| Wetland vegetation present? <input checked="" type="radio"/> Yes <input type="radio"/> No | Is the sampling point within a wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No |
| Wetland hydrology present? <input checked="" type="radio"/> Yes <input type="radio"/> No | |
| Hydric soils present? <input checked="" type="radio"/> Yes <input type="radio"/> No | |

Wetland Functions, Values*

| | |
|---|--|
| <input type="checkbox"/> Groundwater recharge, discharge | <input type="checkbox"/> Threatened, endangered species concerns |
| <input type="checkbox"/> Floodflow alteration | <input type="checkbox"/> Recreation |
| <input checked="" type="checkbox"/> Sediment, toxin retention | <input type="checkbox"/> Educational, scientific value |
| <input type="checkbox"/> Nutrient removal, transformation | <input type="checkbox"/> Uniqueness, heritage value |
| <input type="checkbox"/> Production export | <input type="checkbox"/> Visual quality, aesthetics |
| <input type="checkbox"/> Wildlife habitat, corridor | <input type="checkbox"/> Economic benefits |
| <input type="checkbox"/> Fish, shellfish habitat | <input type="checkbox"/> Other (explain) |
| <input checked="" type="checkbox"/> Streambank stabilization | |

*L = low, M = medium, H = high rating.

Remarks: Wetland traps sediments and pollutants from landscaped/mowed area behind Comfort Inn - preventing pollutants from reaching H₂O. Vegetation stabilizes ditch banks.

Field Data Form
Routine Wetland Delineation

| | |
|--|--|
| Project/Site <u>US 34 - US 287 to LCR 3 EA</u> Applicant/Owner <u>CDOT Region 4</u> Investigator <u>R. Pierce</u> | Date <u>5/30/06</u> County <u>Larimer</u> State <u>CO</u> |
| Do normal circumstances exist at the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed ("atypical situation")? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential "problem area"? <input type="radio"/> Yes <input checked="" type="radio"/> No | Community ID <u>8</u> Transect # <u>—</u> Site/Plot # <u>1</u> Photo # <u>—</u> |
| Location Description: <u>North of US 34, east bank of Loveland Greeley Canal. Section 7, T5N, R68W</u> | |
| Plan Sheet # <u> </u> | |

VEGETATION

| Plant Species | Layer | Rating | Pct | Plant Species | Layer | Rating | Pct |
|--------------------------------|----------|--------------|------------|---------------|-------|--------|-------|
| 1. <u>Phalaris arundinacea</u> | <u>H</u> | <u>FACW+</u> | <u>75%</u> | 9. _____ | _____ | _____ | _____ |
| 2. <u>Carex emoryi</u> | <u>H</u> | <u>OBL</u> | <u>25%</u> | 10. _____ | _____ | _____ | _____ |
| 3. _____ | _____ | _____ | _____ | 11. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ | 12. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ | 13. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ | 14. _____ | _____ | _____ | _____ |
| 7. _____ | _____ | _____ | _____ | 15. _____ | _____ | _____ | _____ |
| 8. _____ | _____ | _____ | _____ | 16. _____ | _____ | _____ | _____ |

Percent Dominant Species that are Fac, FacW, or Obl 100%

Remarks: Adjacent to WL was unidentified small tree - several and Chinese elm. Abrupt boundary.

HYDROLOGY

| | |
|---|---|
| <u>Recorded Data</u> ___ Stream, lake, tide gage ___ Aerial photograph ___ Other (explain) <input checked="" type="checkbox"/> No recorded data available | <u>Wetland Hydrology Indicators</u> Primary: ___ Inundated ___ Saturated in upper 12 inches <input checked="" type="checkbox"/> Water marks ___ Drift lines ___ Sediment deposits ___ Drainage patterns Secondary: ___ Oxidized root channels in upper 12 inches ___ Water-stained leaves ___ Local soil survey data <input checked="" type="checkbox"/> FAC-neutral test 2: 0 <input checked="" type="checkbox"/> Other (explain below) |
| <u>Field Observations</u> Depth of surface water: _____ (in.) Depth to free water in pit: _____ (in.) Depth to saturated soil: _____ (in.) <u>(No pits)</u> | Remarks: <u>Marks on canarygrass where ditch water peaked indicating seasonal changes (human induced) although significant hydrology for strip of wetland veg.</u> |

SOILS

| Map Unit Name (series, phase) <u>Nunn clay loam</u> | | Drainage Class: <u>SPD</u> | | | |
|---|---------|---|--------------------------------|-----------------------------|---|
| Taxonomy (subgroup) _____ | | Map type confirmed? Yes <input type="radio"/> No <input checked="" type="radio"/> | | | |
| Profile Description | | | | | |
| Depth (inches) | Horizon | Matrix Color (Munsell, moist) | Mottle Colors (Munsell, moist) | Mottles Qty./Size/Contrast* | Soil Texture, Structure Concretions, etc. |
| _____ | _____ | _____ | _____ | ____/____/____ | _____ |
| _____ | _____ | _____ | _____ | ____/____/____ | _____ |
| _____ | _____ | _____ | _____ | ____/____/____ | _____ |
| _____ | _____ | _____ | _____ | ____/____/____ | _____ |
| _____ | _____ | _____ | _____ | ____/____/____ | _____ |

*Quantity: f=few (<2%), c=common (2-20%), or m=many (>20%) / Size: f=fine (<5mm), m=medium (5-15mm), or c=course (>15mm) / Contrast: f=faint, d=distinct, or p=pronounced.

| | |
|--|---|
| Hydric Soil Indicators | |
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions present |
| <input type="checkbox"/> Histic epipedon | <input type="checkbox"/> High organic content in surface layer of sandy soils |
| <input type="checkbox"/> Sulfidic odor | <input type="checkbox"/> Organic streaking in sandy soils |
| <input type="checkbox"/> Aquic moisture regime | <input type="checkbox"/> Listed on local hydric soils listing |
| <input type="checkbox"/> Reducing conditions present | <input type="checkbox"/> Listed on national hydric soils listing |
| <input type="checkbox"/> Gleyed or low-chroma colors | <input checked="" type="checkbox"/> Other (explain below) |

Remarks: Mapped unit not hydric but ditch creating "new" drainage through area providing hydrology to veg. Abrupt vegetation boundary: OBL and FACW.

WETLAND DETERMINATION

| | | |
|---|---|--|
| Wetland vegetation present? | Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the sampling point within a wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Wetland hydrology present? | Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Hydric soils present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Functions, Values* | | |
| <input type="checkbox"/> Groundwater recharge, discharge <input type="checkbox"/> Floodflow alteration <input checked="" type="checkbox"/> Sediment, toxin retention <input type="checkbox"/> Nutrient removal, transformation <input type="checkbox"/> Production export <input checked="" type="checkbox"/> Wildlife habitat, corridor <input type="checkbox"/> Fish, shellfish habitat <input checked="" type="checkbox"/> Streambank stabilization | <input type="checkbox"/> Threatened, endangered species concerns <input type="checkbox"/> Recreation <input type="checkbox"/> Educational, scientific value <input type="checkbox"/> Uniqueness, heritage value <input type="checkbox"/> Visual quality, aesthetics <input type="checkbox"/> Economic benefits <input type="checkbox"/> Other (explain) | *L = low, M = medium, H = high rating. |
| Remarks: Wildlife habitat got medium rating because trees border the wetland offering more diverse habitat. | | |

Field Data Form
Routine Wetland Delineation

| | |
|---|--|
| Project/Site <u>US 34-US 287 to LCR 3 EA</u> Applicant/Owner <u>CDOT Region 4</u> Investigator <u>R. Pierce</u> | Date <u>5/30/06</u> County <u>Larimer</u> State <u>CO</u> |
| Do normal circumstances exist at the site? Yes <input type="radio"/> No <input type="radio"/> Is the site significantly disturbed ("atypical situation")? Yes <input type="radio"/> No <input type="radio"/> Is the area a potential "problem area"? Yes <input type="radio"/> No <input type="radio"/> | Community ID <u>3</u> Transect # <u> </u> Site/Plot # <u>1</u> Photo # <u> </u> |
| Location Description: <u>North of US 34 along Boyd Lake Outlet Exchange Ditch that flows from (or to?) Boyd Lake to the north. Deeply incised ditch. Sec 8, T5N, R68W</u> | |
| Plan Sheet # <u> </u> | |

VEGETATION

| Plant Species | Layer | Rating | Pct | Plant Species | Layer | Rating | Pct |
|--------------------------------|----------|--------------|------------|---------------|-------|--------|-------|
| 1. <u>Phalaris arundinacea</u> | <u>H</u> | <u>FACW+</u> | <u>75%</u> | 9. _____ | _____ | _____ | _____ |
| 2. <u>Rumex crispus</u> | <u>H</u> | <u>FACW</u> | <u>10%</u> | 10. _____ | _____ | _____ | _____ |
| 3. <u>Salix exigua</u> | <u>S</u> | <u>OBL</u> | <u>10%</u> | 11. _____ | _____ | _____ | _____ |
| 4. <u>Sarcopus validus</u> | <u>H</u> | <u>OBL</u> | <u>5%</u> | 12. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ | 13. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ | 14. _____ | _____ | _____ | _____ |
| 7. _____ | _____ | _____ | _____ | 15. _____ | _____ | _____ | _____ |
| 8. _____ | _____ | _____ | _____ | 16. _____ | _____ | _____ | _____ |

Percent Dominant Species that are Fac, FacW, or Obl 100%

Remarks: Vegetation in the channel bottom. Adjacent non-wetlands very weedy = BRIN, KOSC, CANU, CIAR, CYOF, catnip, and COAR.

HYDROLOGY

| | |
|--|--|
| ___ Recorded Data ___ Stream, lake, tide gage ___ Aerial photograph ___ Other (explain) <input checked="" type="checkbox"/> No recorded data available | Wetland Hydrology Indicators Primary: <input checked="" type="checkbox"/> Inundated ___ Saturated in upper 12 inches ___ Water marks ___ Drift lines ___ Sediment deposits ___ Drainage patterns Secondary: ___ Oxidized root channels in upper 12 inches ___ Water-stained leaves ___ Local soil survey data <input checked="" type="checkbox"/> FAC-neutral test ___ Other (explain below) |
| Field Observations Depth of surface water: _____ (in.) Depth to free water in pit: _____ (in.) Depth to saturated soil: _____ (in.) | Remarks: <u>Dug no soil pit although standing (flowing) H₂O throughout WL.</u> |

SOILS

Map Unit Name (series, phase) Fort Collins loam Drainage Class: WD
 Taxonomy (subgroup) _____ Map type confirmed? Yes No

Profile Description

| Depth (inches) | Horizon | Matrix Color (Munsell, moist) | Mottle Colors (Munsell, moist) | Mottles Qty./Size/Contrast* | Soil Texture, Structure Concretions, etc. |
|----------------|---------|-------------------------------|--------------------------------|-----------------------------|---|
| _____ | _____ | _____ | _____ | ____/____/____ | _____ |
| _____ | _____ | _____ | _____ | ____/____/____ | _____ |
| _____ | _____ | _____ | _____ | ____/____/____ | _____ |
| _____ | _____ | _____ | _____ | ____/____/____ | _____ |
| _____ | _____ | _____ | _____ | ____/____/____ | _____ |

*Quantity: f=few (<2%), c=common (2-20%), or m=many (>20%) / Size: f=fine (<5mm), m=medium (5-15mm), or c=coarse (>15mm) / Contrast: f=faint, d=distinct, or p=prominent.

Hydric Soil Indicators

| | |
|--|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions present |
| <input type="checkbox"/> Histic epipedon | <input type="checkbox"/> High organic content in surface layer of sandy soils |
| <input type="checkbox"/> Sulfidic odor | <input type="checkbox"/> Organic streaking in sandy soils |
| <input type="checkbox"/> Aquic moisture regime | <input type="checkbox"/> Listed on local hydric soils listing |
| <input type="checkbox"/> Reducing conditions present | <input type="checkbox"/> Listed on national hydric soils listing |
| <input type="checkbox"/> Gleyed or low-chroma colors | <input type="checkbox"/> Other (explain below) |

Remarks: No pit dug. Eroding. Vegetation in ditch bottom w/ thin soils.

WETLAND DETERMINATION

| | |
|--|---|
| Wetland vegetation present? <input checked="" type="radio"/> Yes <input type="radio"/> No | Is the sampling point within a wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No |
| Wetland hydrology present? <input checked="" type="radio"/> Yes <input type="radio"/> No | |
| Hydric soils present? <u>(assumed)</u> <input checked="" type="radio"/> Yes <input type="radio"/> No | |

Wetland Functions, Values*

| | |
|--|--|
| <input type="checkbox"/> Groundwater recharge, discharge | <input type="checkbox"/> Threatened, endangered species concerns |
| <input checked="" type="checkbox"/> Floodflow alteration | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Sediment, toxin retention | <input type="checkbox"/> Educational, scientific value |
| <input type="checkbox"/> Nutrient removal, transformation | <input type="checkbox"/> Uniqueness, heritage value |
| <input type="checkbox"/> Production export | <input type="checkbox"/> Visual quality, aesthetics |
| <input checked="" type="checkbox"/> Wildlife habitat, corridor | <input type="checkbox"/> Economic benefits |
| <input checked="" type="checkbox"/> Fish, shellfish habitat | <input type="checkbox"/> Other (explain) |
| <input checked="" type="checkbox"/> Streambank stabilization | |

*L = low, M = medium, H = high rating.

Remarks: WL in stream/ditch channel slowing flow of heavier waters. Small fish were observed in ditch.

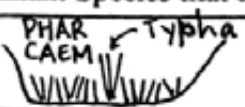
Field Data Form
Routine Wetland Delineation

| | |
|---|-----------------------|
| Project/Site <u>US 34-US 287 to LCR3 EA</u> | Date <u>5/30/06</u> |
| Applicant/Owner <u>COOT Region 4</u> | County <u>Larimer</u> |
| Investigator <u>R. Pierce</u> | State <u>CO</u> |
| Do normal circumstances exist at the site? <input checked="" type="radio"/> Yes <input type="radio"/> No | Community ID <u>9</u> |
| Is the site significantly disturbed ("atypical situation")? <input checked="" type="radio"/> Yes <input type="radio"/> No | Transect # <u>—</u> |
| Is the area a potential "problem area"? <input checked="" type="radio"/> Yes <input type="radio"/> No | Site/Plot # <u>1</u> |
| | Photo # <u>—</u> |
| Location Description: <u>South of US 34 along Boyd Lake Outlet Exchange Ditch. West of Boyd Lake Ave. Section 17, T5N, R68W</u> | |
| | Plan Sheet # <u>—</u> |

VEGETATION

| Plant Species | Layer | Rating | Pct | Plant Species | Layer | Rating | Pct |
|--------------------------------|----------|--------------|------------|---------------|-------|--------|-----|
| 1. <u>Phalaris arundinacea</u> | <u>H</u> | <u>FACw+</u> | <u>75%</u> | 9. | | | |
| 2. <u>Carex emoryi</u> | <u>H</u> | <u>OBL</u> | <u>20%</u> | 10. | | | |
| 3. <u>Typha angustifolia</u> | <u>H</u> | <u>OBL</u> | <u>5%</u> | 11. | | | |
| 4. | | | | 12. | | | |
| 5. | | | | 13. | | | |
| 6. | | | | 14. | | | |
| 7. | | | | 15. | | | |
| 8. | | | | 16. | | | |

Percent Dominant Species that are Fac, FacW, or Obl 100%

Remarks:  Trees along toe of slope were FRPE and Ulmus pumila. Very incised.

HYDROLOGY

| | |
|---|---|
| <p><u>Recorded Data</u></p> <p><input type="checkbox"/> Stream, lake, tide gage</p> <p><input type="checkbox"/> Aerial photograph</p> <p><input type="checkbox"/> Other (explain)</p> <p><input checked="" type="checkbox"/> No recorded data available</p> | <p><u>Wetland Hydrology Indicators</u></p> <p>Primary:</p> <p><input type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in upper 12 inches</p> <p><input type="checkbox"/> Water marks</p> <p><input type="checkbox"/> Drift lines</p> <p><input type="checkbox"/> Sediment deposits</p> <p><input type="checkbox"/> Drainage patterns</p> <p>Secondary:</p> <p><input type="checkbox"/> Oxidized root channels in upper 12 inches</p> <p><input type="checkbox"/> Water-stained leaves</p> <p><input type="checkbox"/> Local soil survey data</p> <p><input checked="" type="checkbox"/> FAC-neutral test 3:0</p> <p><input checked="" type="checkbox"/> Other (explain below)</p> |
| <p><u>Field Observations</u></p> <p>Depth of surface water: <u>None</u> (in.)</p> <p>Depth to free water in pit: <u>-16"</u> (in.)</p> <p>Depth to saturated soil: <u>0</u> (in.)</p> <p>(pit = 16")</p> | |
| <p>Remarks: <u>Saturated completely to surface. Sopping soils. Water flowing through center of channel.</u></p> | |

SOILS

| Map Unit Name (series, phase) <u>Fort Collins loam</u> | | Drainage Class: <u>WD</u> | | | |
|---|---------|---|---|-----------------------------|---|
| Taxonomy (subgroup) _____ | | Map type confirmed? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | |
| Profile Description | | | | | |
| Depth (inches) | Horizon | Matrix Color (Munsell, moist) | Mottle Colors (Munsell, moist) | Mottles Qty./Size/Contrast* | Soil Texture, Structure Concretions, etc. |
| 0-6 | | 10YR 4/2 | 7.5UR 4/6 | 1/1 | — |
| 6-16 | | Gley 2.5/5B | Gley 2.5/5BP | 1/1 | — |
| | | | | | |
| | | | | | |
| | | | | | |
| *Quantity: f=few (<2%), c=common (2-20%), or m=many (>20%) / Size: f=fine (<5mm), m=medium (5-15mm), or c=coarse (>15mm) / Contrast: f=faint, d=distinct, or p=prominent. | | | | | |
| Hydric Soil Indicators | | | | | |
| <input type="checkbox"/> Histosol | | | <input type="checkbox"/> Concretions present | | |
| <input checked="" type="checkbox"/> Histic epipedon | | | <input type="checkbox"/> High organic content in surface layer of sandy soils | | |
| <input checked="" type="checkbox"/> Sulfidic odor | | | <input type="checkbox"/> Organic streaking in sandy soils | | |
| <input type="checkbox"/> Aquic moisture regime | | | <input type="checkbox"/> Listed on local hydric soils listing | | |
| <input type="checkbox"/> Reducing conditions present | | | <input type="checkbox"/> Listed on national hydric soils listing | | |
| <input checked="" type="checkbox"/> Gleyed or low-chroma colors | | | <input type="checkbox"/> Other (explain below) | | |
| Remarks: <u>Very sulfidic-smelling soils. Too wet-couldn't get good texture sample.</u> | | | | | |

WETLAND DETERMINATION

| | | | |
|--|---|---|---|
| Wetland vegetation present? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Is the sampling point within a wetland? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Wetland hydrology present? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| Hydric soils present? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| Wetland Functions, Values* | | | |
| <input type="checkbox"/> Groundwater recharge, discharge | <input type="checkbox"/> Threatened, endangered species concerns | | |
| <input checked="" type="checkbox"/> Floodflow alteration | <input type="checkbox"/> Recreation | | |
| <input checked="" type="checkbox"/> Sediment, toxin retention | <input type="checkbox"/> Educational, scientific value | | |
| <input type="checkbox"/> Nutrient removal, transformation | <input type="checkbox"/> Uniqueness, heritage value | | |
| <input checked="" type="checkbox"/> Production export | <input checked="" type="checkbox"/> Visual quality, aesthetics | | |
| <input checked="" type="checkbox"/> Wildlife habitat, corridor | <input type="checkbox"/> Economic benefits | | |
| <input checked="" type="checkbox"/> Fish, shellfish habitat | <input type="checkbox"/> Other (explain) | | |
| <input checked="" type="checkbox"/> Streambank stabilization | | | |
| *L = low, M = medium, H = high rating. | | | |
| Remarks: <u>Although the vegetation likely dissipates water energy from a storm event, the channel is incised so flood water would likely not leave the channel. Although veg. would slow water entering the channel flow from adjacent land & highway runoff.</u> | | | |


**Field Data Form
Routine Wetland Delineation**

| | | | | | | | |
|--|---|--------------------------------------|--------------------------|---------------------------|-------------------------------------|---------------------------|-------------------------------------|
| Project/Site <u>US 34 - US 287 to LCR 3 EA</u> Applicant/Owner <u>CDOT Region 4</u> Investigator <u>R. Pierce</u> | Date <u>5/30/06</u> County <u>Larimer</u> State <u>CO</u> | | | | | | |
| Do normal circumstances exist at the site? Is the site significantly disturbed ("atypical situation")? Is the area a potential "problem area"? | <table style="width:100%; border: none;"> <tr> <td style="text-align: center;"><input checked="" type="radio"/> Yes</td> <td style="text-align: center;"><input type="radio"/> No</td> </tr> <tr> <td style="text-align: center;"><input type="radio"/> Yes</td> <td style="text-align: center;"><input checked="" type="radio"/> No</td> </tr> <tr> <td style="text-align: center;"><input type="radio"/> Yes</td> <td style="text-align: center;"><input checked="" type="radio"/> No</td> </tr> </table> | <input checked="" type="radio"/> Yes | <input type="radio"/> No | <input type="radio"/> Yes | <input checked="" type="radio"/> No | <input type="radio"/> Yes | <input checked="" type="radio"/> No |
| <input checked="" type="radio"/> Yes | <input type="radio"/> No | | | | | | |
| <input type="radio"/> Yes | <input checked="" type="radio"/> No | | | | | | |
| <input type="radio"/> Yes | <input checked="" type="radio"/> No | | | | | | |
| Location Description: <u>South of US 34 at Hahns Peak Drive. Farmers Ditch east bank. Section 16, T5N, R68W</u> | | | | | | | |
| Community ID <u>10</u> Transect # <u> </u> Site/Plot # <u>1</u> Photo # <u> </u> Plan Sheet # <u> </u> | | | | | | | |

VEGETATION

| Plant Species | Layer | Rating | Pct | Plant Species | Layer | Rating | Pct |
|--------------------------------|----------|--------------|------------|---------------|-------|--------|-------|
| 1. <u>Phalaris arundinacea</u> | <u>H</u> | <u>FACW+</u> | <u>60%</u> | 9. _____ | _____ | _____ | _____ |
| 2. <u>Carex emoryi</u> | <u>H</u> | <u>OBL</u> | <u>40%</u> | 10. _____ | _____ | _____ | _____ |
| 3. _____ | _____ | _____ | _____ | 11. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ | 12. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ | 13. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ | 14. _____ | _____ | _____ | _____ |
| 7. _____ | _____ | _____ | _____ | 15. _____ | _____ | _____ | _____ |
| 8. _____ | _____ | _____ | _____ | 16. _____ | _____ | _____ | _____ |

Percent Dominant Species that are Fac, FacW, or Obl 100%

Remarks: All hydrophytes and abrupt boundary along ditch. 

HYDROLOGY

| | |
|---|---|
| <u>Recorded Data</u> ___ Stream, lake, tide gage ___ Aerial photograph ___ Other (explain) <input checked="" type="checkbox"/> No recorded data available | <u>Wetland Hydrology Indicators</u> Primary: <ul style="list-style-type: none"> ___ Inundated <input checked="" type="checkbox"/> Saturated in upper 12 inches ___ Water marks ___ Drift lines ___ Sediment deposits ___ Drainage patterns Secondary: <ul style="list-style-type: none"> ___ Oxidized root channels in upper 12 inches ___ Water-stained leaves ___ Local soil survey data <input checked="" type="checkbox"/> FAC-neutral test 2:1 ___ Other (explain below) |
| <u>Field Observations</u> Depth of surface water: <u>none</u> (in.) Depth to free water in pit: <u>none</u> (in.) Depth to saturated soil: <u>4</u> (in.) (pit = 12") | Remarks: <u>Soils slightly saturated at 4" below ground. Very wet at 10" and below</u> |

SOILS

| Map Unit Name (series, phase) <u>Nunn clay loam</u> | | Drainage Class: <u>WD</u> | | | |
|---|---------|---|--------------------------------|-----------------------------|---|
| Taxonomy (subgroup) _____ | | Map type confirmed? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | |
| Profile Description | | | | | |
| Depth (inches) | Horizon | Matrix Color (Munsell, moist) | Mottle Colors (Munsell, moist) | Mottles Qty./Size/Contrast* | Soil Texture, Structure Concretions, etc. |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

*Quantity: f=few (<2%), c=common (2-20%), or m=many (>20%) / Size: f=fine (<5mm), m=medium (5-15mm), or c=coarse (>15mm) / Contrast: f=faint, d=distinct, or p=prominent.

| | |
|--|---|
| Hydric Soil Indicators | |
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions present |
| <input type="checkbox"/> Histic epipedon | <input type="checkbox"/> High organic content in surface layer of sandy soils |
| <input type="checkbox"/> Sulfidic odor | <input type="checkbox"/> Organic streaking in sandy soils |
| <input type="checkbox"/> Aquic moisture regime | <input type="checkbox"/> Listed on local hydric soils listing |
| <input type="checkbox"/> Reducing conditions present | <input type="checkbox"/> Listed on national hydric soils listing |
| <input type="checkbox"/> Gleyed or low-chroma colors | <input checked="" type="checkbox"/> Other (explain below) |

Remarks: Pit dug to 12". No colors or textures recorded. Hydrology and hydrophytes present & abrupt boundary.

WETLAND DETERMINATION

| | | | |
|--|---|---|---|
| Wetland vegetation present? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Is the sampling point within a wetland? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Wetland hydrology present? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| Hydric soils present? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| Wetland Functions, Values* | | | |
| <input type="checkbox"/> Groundwater recharge, discharge | <input type="checkbox"/> Threatened, endangered species concerns | | |
| <input type="checkbox"/> Floodflow alteration | <input type="checkbox"/> Recreation | | |
| <input checked="" type="checkbox"/> Sediment, toxin retention | <input type="checkbox"/> Educational, scientific value | | |
| <input checked="" type="checkbox"/> Nutrient removal, transformation | <input type="checkbox"/> Uniqueness, heritage value | | |
| <input type="checkbox"/> Production export | <input type="checkbox"/> Visual quality, aesthetics | | |
| <input type="checkbox"/> Wildlife habitat, corridor | <input type="checkbox"/> Economic benefits | | |
| <input type="checkbox"/> Fish, shellfish habitat | <input type="checkbox"/> Other (explain) | | |
| <input checked="" type="checkbox"/> Streambank stabilization | | | |

*L = low, M = medium, H = high rating.

Remarks: Sediment and nutrient retention and removal was rated medium because adjacent agriculture fields likely have pollutants in the runoff and WL veg. is dense - acting like a sink / sponge. Thick veg. like Phalaris & Carex hold the soils in place for bank stabilization.

Field Data Form
Routine Wetland Delineation

| | |
|--|--|
| Project/Site <u>US 34 - US 287 to LCR 3 EA</u> Applicant/Owner <u>COOT Region 4</u> Investigator <u>R. Pierce</u> | Date <u>5/30/06</u> County <u>Larimer</u> State <u>CO</u> |
| Do normal circumstances exist at the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed ("atypical situation")? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential "problem area"? <input type="radio"/> Yes <input checked="" type="radio"/> No | Community ID <u>2</u> Transect # <u>—</u> Site/Plot # <u>1</u> Photo # <u>—</u> |
| Location Description: <u>Along toe of slope north of US 34 and south of ROW fence along business. Immediately west of Community ID # 1. West of culvert pipe. Sec 11, T5N, R68W</u> | |

VEGETATION

| Plant Species | Layer | Rating | Pct | Plant Species | Layer | Rating | Pct |
|----------------------------|----------|-------------|---------------|---------------|-------|--------|-------|
| 1. <u>Carex lanuginosa</u> | <u>H</u> | <u>OBL</u> | <u>95%</u> | 9. _____ | _____ | _____ | _____ |
| 2. <u>Cirsium arvense</u> | <u>H</u> | <u>FACU</u> | <u><5%</u> | 10. _____ | _____ | _____ | _____ |
| 3. _____ | _____ | _____ | _____ | 11. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ | 12. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ | 13. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ | 14. _____ | _____ | _____ | _____ |
| 7. _____ | _____ | _____ | _____ | 15. _____ | _____ | _____ | _____ |
| 8. _____ | _____ | _____ | _____ | 16. _____ | _____ | _____ | _____ |

Percent Dominant Species that are Fac, FacW, or Obl 100% (only C. lanuginosa)

Remarks:

HYDROLOGY

| | |
|--|---|
| <u>Recorded Data</u> <input type="checkbox"/> Stream, lake, tide gage <input type="checkbox"/> Aerial photograph <input type="checkbox"/> Other (explain) <input checked="" type="checkbox"/> No recorded data available | <u>Wetland Hydrology Indicators</u> Primary: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in upper 12 inches <input type="checkbox"/> Water marks <input type="checkbox"/> Drift lines <input type="checkbox"/> Sediment deposits <input checked="" type="checkbox"/> Drainage patterns Secondary: <input type="checkbox"/> Oxidized root channels in upper 12 inches <input type="checkbox"/> Water-stained leaves <input type="checkbox"/> Local soil survey data <input checked="" type="checkbox"/> FAC-neutral test 1:0 <input type="checkbox"/> Other (explain below) |
| <u>Field Observations</u> Depth of surface water: <u>none</u> (in.) Depth to free water in pit: <u>none</u> (in.) Depth to saturated soil: <u>>9"</u> (in.) (pit = 9") | Remarks: <u>Hydrology is coming from culvert pipe leading to south side of US 34.</u> |

SOILS

| Map Unit Name (series, phase) <u>Nunn clay loam</u> | | Drainage Class: <u>SPD</u> | | | |
|---|---------|---|--------------------------------|-----------------------------|---|
| Taxonomy (subgroup) _____ | | Map type confirmed? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | |
| Profile Description | | | | | |
| Depth (inches) | Horizon | Matrix Color (Munsell, moist) | Mottle Colors (Munsell, moist) | Mottles Qty./Size/Contrast* | Soil Texture, Structure Concretions, etc. |
| 0-6 | | 10YR 3/1 | — | 1 / 1 | — |
| 6-9 | | 10YR 3/1 | 7.5YR 5/8 | F / F / D | — |
| | | | | | |
| | | | | | |
| | | | | | |

*Quantity: f=few (<2%), c=common (2-20%), or m=many (>20%) / Size: f=fine (<5mm), m=medium (5-15mm), or c=coarse (>15mm) / Contrast: f=faint, d=distinct, or p=prominent.

| | |
|--|---|
| Hydric Soil Indicators | |
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions present |
| <input type="checkbox"/> Histic epipedon | <input type="checkbox"/> High organic content in surface layer of sandy soils |
| <input type="checkbox"/> Sulfidic odor | <input type="checkbox"/> Organic streaking in sandy soils |
| <input type="checkbox"/> Aquic moisture regime | <input type="checkbox"/> Listed on local hydric soils listing |
| <input type="checkbox"/> Reducing conditions present | <input type="checkbox"/> Listed on national hydric soils listing |
| <input type="checkbox"/> Gleyed or low-chroma colors | <input checked="" type="checkbox"/> Other (explain below) |

Remarks: Marginal soils but assumed hydric. Pit too shallow. Roadside ditch w/ newer soils beginning to display hydric characteristics.

WETLAND DETERMINATION

| | |
|---|---|
| Wetland vegetation present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Is the sampling point within a wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Wetland hydrology present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| Hydric soils present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| Wetland Functions, Values* | |
| <input type="checkbox"/> Groundwater recharge, discharge | <input type="checkbox"/> Threatened, endangered species concerns |
| <input type="checkbox"/> Floodflow alteration | <input type="checkbox"/> Recreation |
| <input checked="" type="checkbox"/> Sediment, toxin retention | <input type="checkbox"/> Educational, scientific value |
| <input type="checkbox"/> Nutrient removal, transformation | <input type="checkbox"/> Uniqueness, heritage value |
| <input type="checkbox"/> Production export | <input type="checkbox"/> Visual quality, aesthetics |
| <input type="checkbox"/> Wildlife habitat, corridor | <input type="checkbox"/> Economic benefits |
| <input type="checkbox"/> Fish, shellfish habitat | <input type="checkbox"/> Other (explain) |
| <input type="checkbox"/> Streambank stabilization | |

*L = low, M = medium, H = high rating.

Remarks: The potential for sediment & toxin retention is moderate b/c roadside ditch - low point traps road pollutants. All other functions low.

Field Data Form
Routine Wetland Delineation

| | |
|--|---|
| Project/Site <u>US 34 - US 287 to LCR 3 EA</u> | Date <u>5/30/06</u> |
| Applicant/Owner <u>CDOT Region 4</u> | County <u>Larimer</u> |
| Investigator <u>R. Pierce</u> | State <u>CO</u> |
| Do normal circumstances exist at the site? Is the site significantly disturbed ("atypical situation")? Is the area a potential "problem area"? | <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Yes <input checked="" type="radio"/> No |
| | Community ID <u>2</u> Transect # <u> </u> Site/Plot # <u>2</u> Photo # <u> </u> |
| Location Description: <u>Along US 34 (north) and west of Union Pacific RR South of ROW fence. East of culvert. SEC II, TSN, R68W</u> | |
| | Plan Sheet # <u> </u> |

VEGETATION

| Plant Species | Layer | Rating | Pct | Plant Species | Layer | Rating | Pct |
|--------------------------------|-------------|-------------|-------------|-----------------|-------------|-------------|-------------|
| 1. <u>Carex lanuginosa</u> | <u>H</u> | <u>OBL</u> | <u>50%</u> | 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> |
| 2. <u>Phalaris arundinacea</u> | <u>H</u> | <u>FACW</u> | <u>20%</u> | 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | 11. <u> </u> | <u> </u> | <u> </u> | <u> </u> |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | 12. <u> </u> | <u> </u> | <u> </u> | <u> </u> |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | 13. <u> </u> | <u> </u> | <u> </u> | <u> </u> |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | 14. <u> </u> | <u> </u> | <u> </u> | <u> </u> |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | 15. <u> </u> | <u> </u> | <u> </u> | <u> </u> |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | 16. <u> </u> | <u> </u> | <u> </u> | <u> </u> |

Percent Dominant Species that are Fac, FacW, or Obl 100%

Remarks: Small amount of Bromus inermis mixed in and milkweed. Typha is coming in too.

HYDROLOGY

| | |
|--|--|
| <input type="checkbox"/> Recorded Data <input type="checkbox"/> Stream, lake, tide gage <input type="checkbox"/> Aerial photograph <input type="checkbox"/> Other (explain) <input checked="" type="checkbox"/> No recorded data available | Wetland Hydrology Indicators Primary: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in upper 12 inches <input type="checkbox"/> Water marks <input type="checkbox"/> Drift lines <input type="checkbox"/> Sediment deposits <input checked="" type="checkbox"/> Drainage patterns Secondary: <input type="checkbox"/> Oxidized root channels in upper 12 inches <input type="checkbox"/> Water-stained leaves <input type="checkbox"/> Local soil survey data <input checked="" type="checkbox"/> FAC-neutral test <u>2:1</u> <input type="checkbox"/> Other (explain below) |
| Field Observations Depth of surface water: <u>none</u> (in.) Depth to free water in pit: <u>none</u> (in.) Depth to saturated soil: <u>> 9</u> (in.) <u>(pit = 9")</u> | Remarks: <u>Roadside ditch</u> |

Field Data Form
Routine Wetland Delineation

| | |
|--|--|
| Project/Site <u>US 34 - US 287 to LCR 3 EA</u> Applicant/Owner <u>CDOT Region 4</u> Investigator <u>R. Pierce</u> | Date <u>5/30/06</u> County <u>Larimer</u> State <u>CO</u> |
| Do normal circumstances exist at the site? Is the site significantly disturbed ("atypical situation")? Is the area a potential "problem area"? | Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> |
| Location Description: <u>depression could be tied to ditch</u> Plan Sheet # _____ <u>Site north of US 34, west of LCR 3, south and adjacent to Union Pacific Railroad - adj. to business. Sec 11, T5N, R68W</u> | |
| Community ID <u>1</u> Transect # _____ Site/Plot # <u>1</u> Photo # _____ | |

VEGETATION

| Plant Species | Layer | Rating | Pct | Plant Species | Layer | Rating | Pct |
|------------------------------|----------|------------|------------|---------------|-------|--------|-------|
| 1. <u>Carex lanuginosa</u> | <u>H</u> | <u>OBL</u> | <u>50%</u> | 9. _____ | _____ | _____ | _____ |
| 2. <u>Typha angustifolia</u> | <u>H</u> | <u>OBL</u> | <u>30%</u> | 10. _____ | _____ | _____ | _____ |
| 3. _____ | _____ | _____ | _____ | 11. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ | 12. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ | 13. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ | 14. _____ | _____ | _____ | _____ |
| 7. _____ | _____ | _____ | _____ | 15. _____ | _____ | _____ | _____ |
| 8. _____ | _____ | _____ | _____ | 16. _____ | _____ | _____ | _____ |

Percent Dominant Species that are Fac, FacW, or Obl 100%

Remarks: Poa species also found at sample site but not dominate.
Extent of WL also contained 1 SAEX. Adj. was CIAR and KOSC

HYDROLOGY

| | |
|---|---|
| <p><u>Recorded Data</u></p> <p>___ Stream, lake, tide gage</p> <p>___ Aerial photograph</p> <p>___ Other (explain)</p> <p><input checked="" type="checkbox"/> No recorded data available</p> | <p><u>Wetland Hydrology Indicators</u></p> <p>Primary: ___ Inundated</p> <p>___ Saturated in upper 12 inches</p> <p>___ Water marks</p> <p>___ Drift lines</p> <p><input checked="" type="checkbox"/> Sediment deposits <u>1</u></p> <p><input checked="" type="checkbox"/> Drainage patterns</p> <p>Secondary: ___ Oxidized root channels in upper 12 inches</p> <p>___ Water-stained leaves</p> <p>___ Local soil survey data</p> <p><input checked="" type="checkbox"/> FAC-neutral test <u>2:0</u></p> <p>___ Other (explain below)</p> |
| <p><u>Field Observations</u></p> <p>Depth of surface water: <u>none</u> (in.)</p> <p>Depth to free water in pit: <u>none</u> (in.)</p> <p>Depth to saturated soil: <u>> 11</u> (in.)</p> <p><u>(11" bottom of pit)</u></p> | <p>Remarks: <u>1) salt deposits found along portions of WL edge</u> <u>Loveland Greeley Canal could be "leaky ditch" supplying WL with hydrology. No other obvious source.</u></p> |

SOILS

| Map Unit Name (series, phase) <u>Nunn clay loam</u> | | Drainage Class: <u>SPD</u> | | | |
|---|---------|---|--------------------------------|-----------------------------|---|
| Taxonomy (subgroup) _____ | | Map type confirmed? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | |
| Profile Description | | | | | |
| Depth (inches) | Horizon | Matrix Color (Munsell, moist) | Mottle Colors (Munsell, moist) | Mottles Qty./Size/Contrast* | Soil Texture, Structure Concretions, etc. |
| 0-10 | — | 10 YR 3/2 | 10 YR 4/6 | few / Fine / prom. | — |
| 10-11 | — | 2.5 YR 5/4 | — | / / | burned coal? |
| | | | | | |
| | | | | | |
| | | | | | |

*Quantity: f=few (<2%), c=common (2-20%), or m=many (>20%) / Size: f=fine (<5mm), m=medium (5-15mm), or c=coarse (>15mm) / Contrast: f=faint, d=distinct, or p=prominent.

| | |
|--|---|
| Hydric Soil Indicators | |
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions present |
| <input type="checkbox"/> Histic epipedon | <input type="checkbox"/> High organic content in surface layer of sandy soils |
| <input type="checkbox"/> Sulfidic odor | <input type="checkbox"/> Organic streaking in sandy soils |
| <input type="checkbox"/> Aquic moisture regime | <input type="checkbox"/> Listed on local hydric soils listing |
| <input type="checkbox"/> Reducing conditions present | <input type="checkbox"/> Listed on national hydric soils listing |
| <input type="checkbox"/> Gleyed or low-chroma colors | <input checked="" type="checkbox"/> Other (explain below) |

Remarks: Profile described within depressional area. Not a listed hydric soil although indicators point to a hydric soil.
Matrix chroma 2 or less w/ mottles at 10" (top horizon)

WETLAND DETERMINATION

| | | | |
|---|--|-----------------------------|---|
| Wetland vegetation present? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Is the sampling point within a wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Wetland hydrology present? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Hydric soils present? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Wetland Functions, Values* | | | |
| <input checked="" type="checkbox"/> L-M Groundwater recharge, discharge | <input type="checkbox"/> L Threatened, endangered species concerns | | |
| <input type="checkbox"/> L Floodflow alteration | <input type="checkbox"/> L Recreation | | |
| <input checked="" type="checkbox"/> M Sediment, toxin retention | <input type="checkbox"/> L Educational, scientific value | | |
| <input checked="" type="checkbox"/> L Nutrient removal, transformation | <input type="checkbox"/> L Uniqueness, heritage value | | |
| <input type="checkbox"/> L Production export | <input checked="" type="checkbox"/> L-M Visual quality, aesthetics | | |
| <input checked="" type="checkbox"/> M Wildlife habitat, corridor | <input type="checkbox"/> L Economic benefits | | |
| <input type="checkbox"/> L Fish, shellfish habitat | <input type="checkbox"/> — Other (explain) | | |
| <input type="checkbox"/> L Streambank stabilization | | | |

*L = low, M = medium, H = high rating.

Remarks: It is unknown whether water is permeating through soils beneath the WL. No outlet was found so groundwater recharge could be a function (hence L-M rating). Many red-winged blackbirds and other species throughout WL.