



May 8, 2018

Ken Freed  
Humboldt County Department of Public Works  
1106 Second Street  
Eureka, CA 95501-0579

RE: Road Evaluation Reports for APN 222-071-014 (Kempe Property)

Dear Mr. Freed,

Enclosed are three Road Evaluation Reports covering 6.8 miles of road accessing APN 222-071-014. These Road Evaluation Reports were originally created for the Delorme Property (Road Segments 1-3 for APN 222-071-014).

In 2017, Kempe began road improvements on his property to comply with California Department of Fish and Wildlife and Regional Water Board requirements. Additional work is scheduled for 2018. These improvements address the site-specific recommendations for Road Segment 3 (Section 4.1 in the enclosed Road Evaluation Report Segment 3).

After this work is completed, Kempe will have completed more than his share of road work to address recommendations in the Road Evaluation Reports for his community.

Please don't hesitate to contact me with any questions.

Sincerely,

Joel Monschke, PE  
Civil Engineer  
[jmonschke@stillwatersci.com](mailto:jmonschke@stillwatersci.com)  
cell: 707-496-7075

HUMBOLDT COUNTY DEPARTMENT OF PUBLIC WORKS  
ROAD EVALUATION REPORT

**PART A: Part A may be completed by the applicant**

Applicant Name: Gary Delorme APN: 222-071-027

Planning & Building Department Case/File No.: 10769

Road Name: Sproul Creek Road Segment 1 (complete a separate form for each road)

From Road (Cross street): Sproul Creek Bridge

To Road (Cross street): Mile 5.2

Length of road segment: 5.2 miles Date Inspected: 4/26/2017

Road is maintained by:  County  Other  
(State, Forest Service, National Park, State Park, BLM, Private, Tribal, etc)

Check one of the following:

**Box 1**  The entire road segment is developed to Category 4 road standards (20 feet wide) or better. If checked, then the road is adequate for the proposed use without further review by the applicant.

**Box 2**  The entire road segment is developed to the equivalent of a road category 4 standard. If checked, then the road is adequate for the proposed use without further review by the applicant.

*An equivalent road category 4 standard is defined as a roadway that is generally 20 feet in width, but has pinch points which narrow the road. Pinch points include, but are not limited to, one-lane bridges, trees, large rock outcroppings, culverts, etc. Pinch points must provide visibility where a driver can see oncoming vehicles through the pinch point which allows the oncoming vehicle to stop and wait in a 20 foot wide section of the road for the other vehicle to pass.*

**Box 3**  The entire road segment is not developed to the equivalent of road category 4 or better. The road may or may not be able to accommodate the proposed use and further evaluation is necessary. Part B is to be completed by a Civil Engineer licensed by the State of California.

The statements in PART A are true and correct and have been made by me after personally inspecting and measuring the road.

*Joel Monschke*

5/3/2017

Signature

Date

Joel Monschke

Name Printed

**Important: Read the instructions before using this form. If you have questions, please call the Dept. of Public Works Land Use Division at 707.445.7205.**

**PART B: Only complete Part B if Box 3 is checked in Part A. Part B is to be completed by a Civil Engineer licensed by the State of California. Complete a separate form for each road.**

Road Name: Sproul Creek Road Segment 1 Date Inspected: 4/26/2017 APN: 222-071-027  
 From Road: Sproul Creek Bridge (Post Mile N/A ) Planning & Building Department Case/File No.:  
 To Road: Mile 5.2 (Post Mile N/A )

1. What is the Average Daily Traffic (ADT) of the road (including other known cannabis projects)?

Number of other known cannabis projects included in ADT calculations:  
 (Contact the Planning & Building Department for information on other nearby projects.) 9

ADT: 80 Date(s) measured: See explanation in Technical Memorandum Section 2.3

Method used to measure ADT:  Counters  Estimated using ITE Trip Generation Book

Is the ADT of the road less than 400?  Yes  No

If YES, then the road is considered very low volume and shall comply with the design standards outlined in the American Association of State Highway and Transportation Officials (AASHTO) Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400). Complete sections 2 and 3 below.

If NO, then the road shall be reviewed per the applicable policies for the design of local roads and streets presented in AASHTO A Policy on Geometric Design of Highways and Streets, commonly known as the "Green Book". Complete section 3 below.

2. Identify site specific safety problems with the road that include, but are not limited to: (Refer to Chapter 3 in AASHTO Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400) for guidance.)

A. Pattern of curve related crashes.

Check one:  No.  Yes, see attached sheet for Post Mile (PM) locations.

B. Physical evidence of curve problems such as skid marks, scarred trees, or scarred utility poles

Check one:  No.  Yes, see attached sheet for PM locations.

C. Substantial edge rutting or encroachment.

Check one:  No.  Yes, see attached sheet for PM locations.

D. History of complaints from residents or law enforcement.

Check one:  No.  Yes ( check if written documentation is attached)

E. Measured or known speed substantially higher than the design speed of the road (20+ MPH higher)

Check one:  No.  Yes.

F. Need for turn-outs.

Check one:  No.  Yes, see attached sheet for PM locations.

3. Conclusions/Recommendations per AASHTO. Check one:

The roadway can accommodate the cumulative increased traffic from this project and all known cannabis projects identified above.

The roadway can accommodate the cumulative increased traffic from this project and all known cannabis projects identified above, if the recommendations on the attached report are done. ( check if a Neighborhood Traffic Management Plan is also required and is attached.)

The roadway cannot accommodate increased traffic from the proposed use. It is not possible to address increased traffic.

A map showing the location and limits of the road being evaluated in PART B is attached. The statements in PART B are true and correct and have been made by me after personally evaluating the road.

[Signature] 5/3/2017  
 Signature of Civil Engineer Date

**Important: Read the instructions before using this form. If you have questions, please call the Dept. of Public Works Land Use Division at 707.445.7205.**



TECHNICAL MEMORANDUM

DATE: 3 May 2017

TO: Humboldt County Department of Public Works

FROM: Joel Monschke, Stillwater Sciences

SUBJECT: Road Evaluation for APN 222-071-027 (Gary Delorme Property):  
**Segment 1** - 5.2 miles of Humboldt County maintained road from Sproul Creek bridge to mile 5.2.

I hereby state that all work described in the attached Technical Memorandum follows accepted engineering practice and was completed under my direction. This Technical Memorandum summarizes results from an evaluation conducted on the access road leading to APN 222-071-027 per guidance from the Humboldt County Department of Public Works. The Delorme property is located approximately 8.2 miles from the Sproul Creek bridge where the County-maintained Category 4 road ends. Based on physical characteristics of the access road, the 8.2-mile access road to the Delorme property has been divided into 4 segments as follows:

- **Segment 1 (Subject of this Technical Memorandum)** – 5.2 miles of County-maintained road from Sproul Creek bridge to mile 5.2.
- **Segment 2** – 0.6 miles of private community-maintained road from end of the County-maintained road to mile 5.8.
- **Segment 3** – 1.0 mile of private community-maintained road from mile 5.8 to mile 6.8.
- **Segment 4** – 1.4 miles of private community-maintained road from mile 6.8 to mile 8.2 (Delorme property boundary).



Joel Monschke, P.E.  
 Civil Engineer  
 Stillwater Sciences

## 1 INTRODUCTION

Stillwater Sciences has been contracted to conduct road evaluation the proposed cannabis project on APN 222-071-027. On 26 April 2017, the field evaluation was conducted by Stillwater Sciences engineer (Joel Monschke). Information in this Technical Memorandum pertains to Segment 1 (See Figure 1) covering 5.2 miles of County-maintained road from Sproul Creek bridge to mile 5.2.

Considering that the road segment analyzed in this Technical Memorandum, is County-maintained, and has several segments with similar characteristics, we used a more general evaluation approach that grouped the road into three similar segments. (Note that for evaluating the private community-maintained road segments we used a more formal approach of road width measurements and photos every 0.1 miles).

## 2 EXPECTED INCREASE IN USE DUE TO CANNABIS PROJECT

### 2.1 Cannabis Project on APN 222-071-027

The cannabis project proposed on APN 222-071-027 will not significantly increase traffic on the roads evaluated herein because cultivation covers a relatively small area (~6,096 SF) and is operated primarily by family members. As such, the project does not require significant imported materials or laborers in addition to typical homesteading activities.

### 2.2 Other Cannabis Projects in the Vicinity

Based on information provided to Stillwater Sciences by Humboldt County Department of Public Works, there are eight additional cannabis permit applications within the vicinity of the Delorme project. These pending applications all use the road (Segment 1) evaluated in this Technical Memorandum. All eight projects involve permitting existing cultivation, so the traffic is not likely to significantly increase compared to the last several years. However, it is expected that the cumulative impacts of all these projects will result in incremental increases in road use considering that several of the projects have proposed cultivation areas significantly larger than Delorme and that as farmers come into compliance they often significantly upgrade their operations.

### 2.3 Average Daily Traffic (ADT) Estimate

Stillwater Sciences' engineer estimated average daily trips based on traffic observations during the road evaluation, number of properties utilizing the access road, and engineering judgement. There are approximately 20 rural residential parcels that utilize Segment 1. If each parcel accounts for four trips per day, that equates to approximately 80 total trips per day (~seven trips per hour during a typical 12-hour day (8 am to 8 pm)). This is generally consistent with the observations made during the road evaluation. While there are likely busier times of day, and busier periods of the year, we believe that this is a reasonably accurate estimate for this road evaluation.

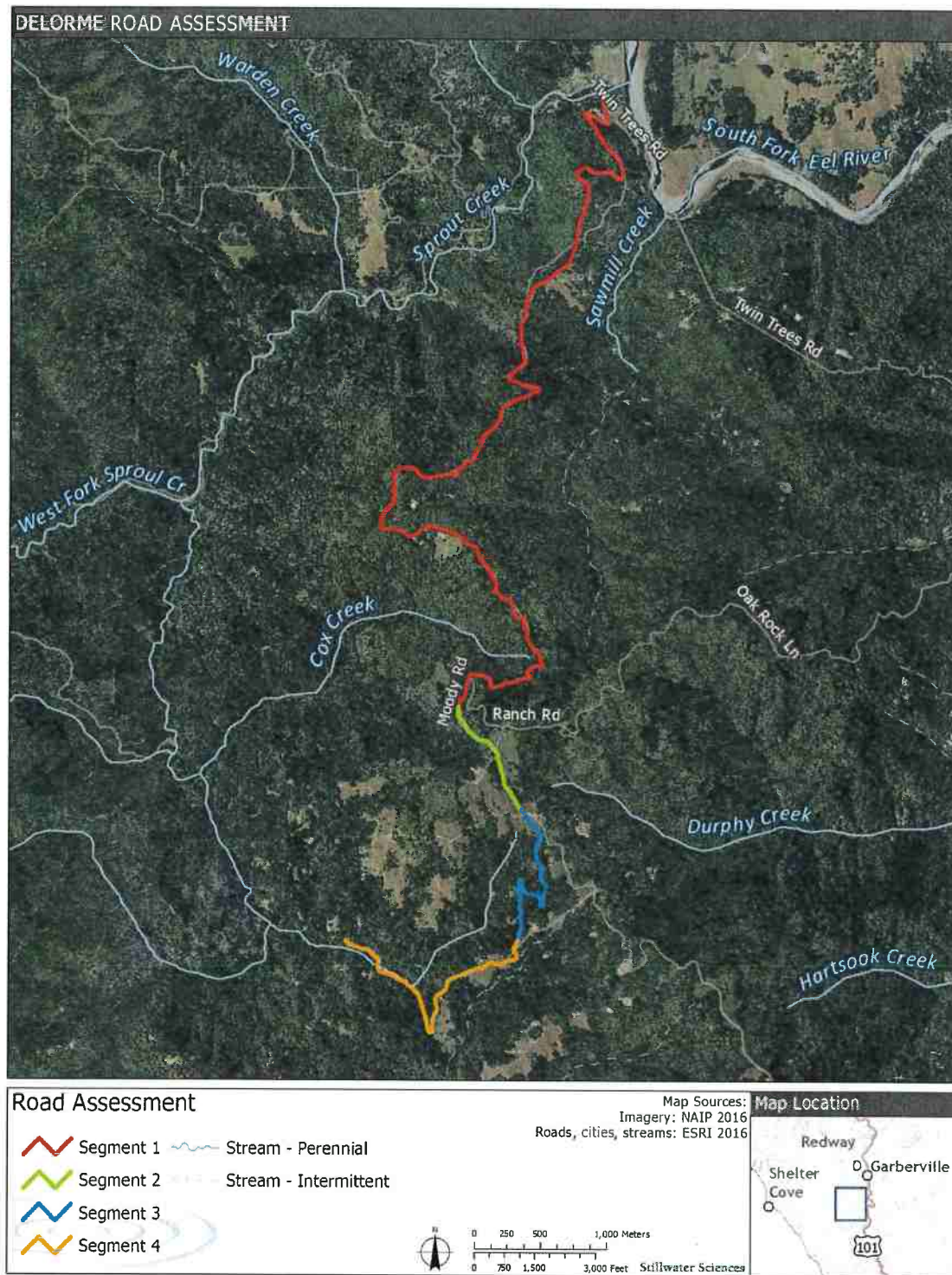


Figure 1. Road evaluation overview map.

### 3 FIELD OBSERVATIONS

#### 3.1 General Observations

Overall, the 5.2 miles of County Road is in relatively good condition and appears to be easily accommodating the current traffic load. There was no evidence of skid marks or scarred trees. Based on signs installed by the local community, it is apparent that the road segment from mile 2.2 to 5.2 does have the greatest safety concerns due to numerous blind curves and narrow sections. It is apparent that significant work has gone into clearing roadside brush along this segment to improve visibility. The remaining visibility concerns are due to the steep topography and curves as shown in the photos.

#### 3.2 Description of Specific Road Segments

A detailed map of the road segment is shown on Figure 2. Generally, this road segment can be divided into the following three segments:

- Segment 1A (Sproul Creek Bridge to mile 1.3): Paved, 0–15% grade, typically 18–24 ft width with 2-ft gravel shoulders, two pinch points (12 ft and 15 ft width with 1-ft shoulders) caused by steep topography and trees (see photos in Appendix A). The two pinch points have decent visibility so this segment generally meets the standard for an “equivalent category 4 road”.
- Segment 1B (Mile 1.3 to mile 2.2): Gravel, 0–15% grade, typically 20–24 ft width with 1-ft shoulders, one pinch point at blind corner (16 ft width with 1-ft shoulder). Except for this pinch point, this segment generally meets the standard for an “equivalent category 4 road”.
- Segment 1C (Mile 2.2 to end of County road at mile 5.2): Curvy gravel road, 0–10% grade, typically 15–20 ft width, 1-ft shoulders, some wider turnouts in narrower segments, Good visibility aside from numerous blind corners. Signs have been installed by the community at either end of this road segment recommending slow speeds and caution.

### 4 RECOMMENDATIONS

#### 4.1 Specific Recommendations for this Road Segment

Generally, this road segment can be divided into the following three segments:

- Segment 1A (Sproul Creek Bridge to mile 1.3): Considering that this road segment generally meets the standard for an “equivalent category 4 road” we have no recommendations.
- Segment 1B (Mile 1.3 to mile 2.2): We recommend widening the Pinch Point 3 at the blind corner at Mile 1.6 (low priority)
- Segment 1C (Mile 2.2 to end of County road at mile 5.2): Considering the numerous blind corners and steep topography, widening this road segment to “equivalent category 4 road” would cause significant environmental impacts. As such, we recommend adding additional signs at some of the worst corners reminding drivers to slow down and stay on the right side of the road (high priority).

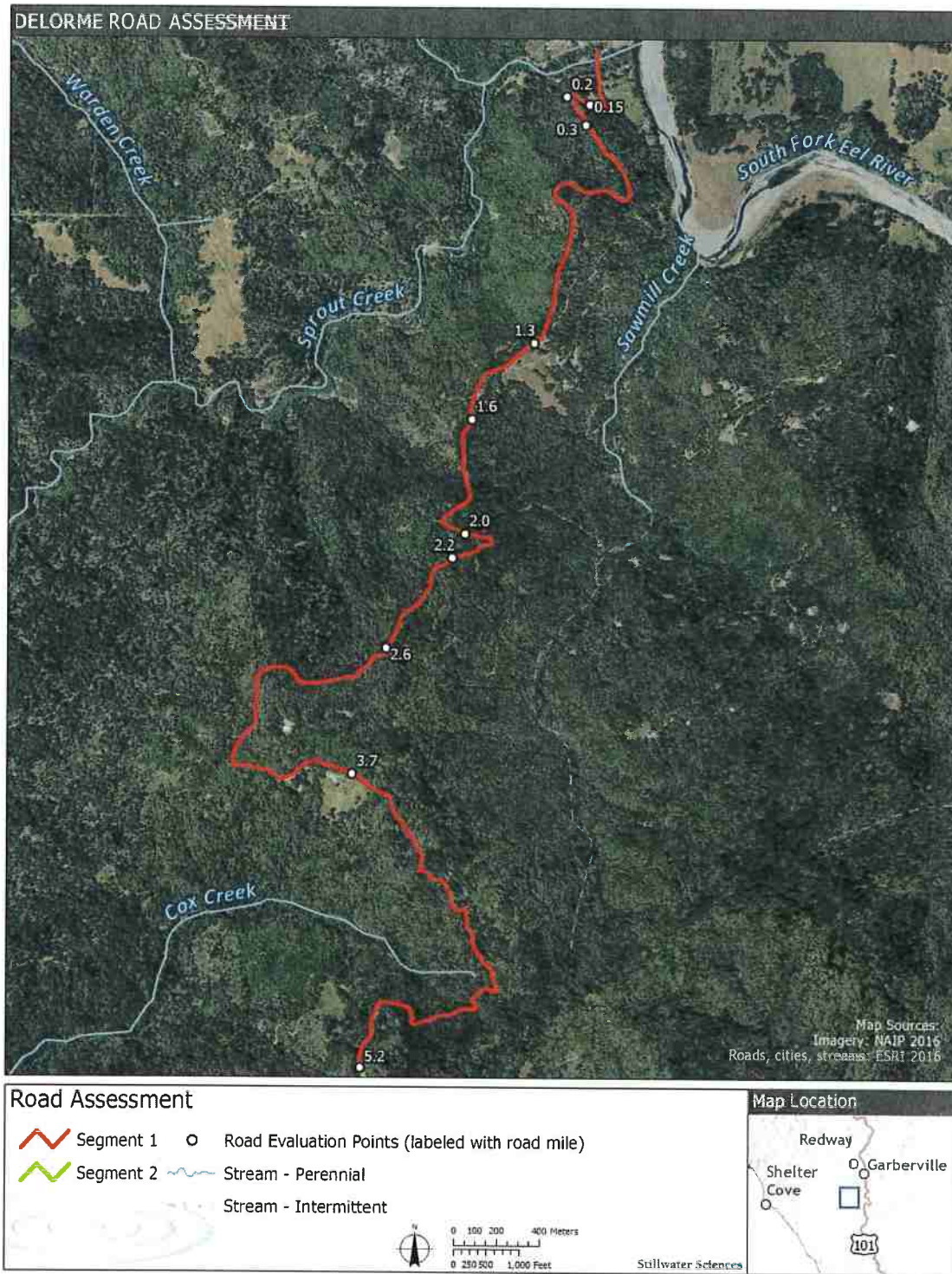


Figure 2. Road Segment 1 map.



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**Appendix A**

**Photos**

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Photo 1. Mile 0.15: Pinch Point 1 with tree; 12-ft pavement width and 1-ft shoulders.



Photo 2. Mile 0.2: Typical steeper gradient paved road segment.



Photo 3. Mile 0.3: Pinch Point 2 with tree; 15-ft pavement width and 1-ft shoulders.



Photo 4. Mile 1.3: Typical lower gradient paved road segment.



Photo 5. Mile 1.3: Typical lower gradient gravel road segment.



Photo 6. Mile 1.6: Pinch Point 3 (first pinch point on gravel segment), blind corner, 16-ft road surface + 1-ft shoulders.



Photo 7. Mile 2.0: Typical steeper segment with Pinch Point 4 in background.



Photo 8. Mile 2.2: Community signs along road at location where road narrows.



Photo 9. Mile 2.6: Typical 15-ft-wide road segment with good visibility, blind corner in background.



Photo 10. Mile 2.6: Typical 18-ft-wide road segment with turnouts.



Photo 11. Mile 3.7: 12-ft-wide Pinch Point 5.



Photo 12. Mile 3.7: Typical 20-ft-wide road segment.



**Photo 13.** Mile 5.2: Typical 16-ft-wide road segment with blind corner—end of County-maintained road.



HUMBOLDT COUNTY DEPARTMENT OF PUBLIC WORKS  
ROAD EVALUATION REPORT

**PART A: Part A may be completed by the applicant**

Applicant Name: Gary Delorme APN: 222-071-027

Planning & Building Department Case/File No.: 10769

Road Name: Sproul Creek Road Segment 2 (complete a separate form for each road)

From Road (Cross street): Mile 5.2

To Road (Cross street): Mile 5.8

Length of road segment: 0.6 miles Date Inspected: 4/26/2017

Road is maintained by:  County  Other Private  
(State, Forest Service, National Park, State Park, BLM, Private, Tribal, etc)

Check one of the following:

**Box 1**  The entire road segment is developed to Category 4 road standards (20 feet wide) or better. If checked, then the road is adequate for the proposed use without further review by the applicant.

**Box 2**  The entire road segment is developed to the equivalent of a road category 4 standard. If checked, then the road is adequate for the proposed use without further review by the applicant.

*An equivalent road category 4 standard is defined as a roadway that is generally 20 feet in width, but has pinch points which narrow the road. Pinch points include, but are not limited to, one-lane bridges, trees, large rock outcroppings, culverts, etc. Pinch points must provide visibility where a driver can see oncoming vehicles through the pinch point which allows the oncoming vehicle to stop and wait in a 20 foot wide section of the road for the other vehicle to pass.*

**Box 3**  The entire road segment is not developed to the equivalent of road category 4 or better. The road may or may not be able to accommodate the proposed use and further evaluation is necessary. Part B is to be completed by a Civil Engineer licensed by the State of California.

The statements in PART A are true and correct and have been made by me after personally inspecting and measuring the road.



5/3/2017

Signature

Date

Joel Monschke

Name Printed

**Important: Read the instructions before using this form. If you have questions, please call the Dept. of Public Works Land Use Division at 707.445.7205.**

**PART B: Only complete Part B if Box 3 is checked in Part A. Part B is to be completed by a Civil Engineer licensed by the State of California. Complete a separate form for each road.**

Road Name: Sproul Creek Road Segment 2 Date Inspected: 4/26/2017 APN: 222-071-027  
 From Road: Mile 5.2 (Post Mile N/A) Planning & Building Department Case/File No.:  
 To Road: Mile 5.8 (Post Mile N/A) 10769

1. What is the Average Daily Traffic (ADT) of the road (including other known cannabis projects)?

Number of other known cannabis projects included in ADT calculations:

(Contact the Planning & Building Department for information on other nearby projects.) 8

ADT: 76 Date(s) measured: See explanation in Technical Memorandum Section 2.3

Method used to measure ADT:  Counters  Estimated using ITE Trip Generation Book

Is the ADT of the road less than 400?  Yes  No

If YES, then the road is considered very low volume and shall comply with the design standards outlined in the American Association of State Highway and Transportation Officials (AASHTO) *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400)*. Complete sections 2 and 3 below.

If NO, then the road shall be reviewed per the applicable policies for the design of local roads and streets presented in AASHTO *A Policy on Geometric Design of Highways and Streets*, commonly known as the "Green Book". Complete section 3 below.

2. Identify site specific safety problems with the road that include, but are not limited to: (Refer to Chapter 3 in AASHTO *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400)* for guidance.)

A. Pattern of curve related crashes.

Check one:  No.  Yes, see attached sheet for Post Mile (PM) locations.

B. Physical evidence of curve problems such as skid marks, scarred trees, or scarred utility poles

Check one:  No.  Yes, see attached sheet for PM locations.

C. Substantial edge rutting or encroachment.

Check one:  No.  Yes, see attached sheet for PM locations.

D. History of complaints from residents or law enforcement.

Check one:  No.  Yes ( check if written documentation is attached)

E. Measured or known speed substantially higher than the design speed of the road (20+ MPH higher)

Check one:  No.  Yes.

F. Need for turn-outs.

Check one:  No.  Yes, see attached sheet for PM locations.

3. Conclusions/Recommendations per AASHTO. Check one:

The roadway can accommodate the cumulative increased traffic from this project and all known cannabis projects identified above.

The roadway can accommodate the cumulative increased traffic from this project and all known cannabis projects identified above, if the recommendations on the attached report are done. ( check if a *Neighborhood Traffic Management Plan* is also required and is attached.)

The roadway cannot accommodate increased traffic from the proposed use. It is not possible to address increased traffic.

A map showing the location and limits of the road being evaluated in PART B is attached. The statements in PART B are true and correct and have been made by me after personally evaluating the road.

[Signature] Date 5/3/2017

**Important: Read the instructions before using this form. If you have questions, please call the Dept. of Public Works Land Use Division at 707.445.7205.**



TECHNICAL MEMORANDUM

DATE: 3 May 2017

TO: Humboldt County Department of Public Works

FROM: Joel Monschke, Stillwater Sciences

SUBJECT: Road Evaluation for APN 222-071-027 (Gary Delorme Property):  
Segment 2 - 0.6 miles of private community-maintained road from mile 5.2 to mile 5.8.

I hereby state that all work described in the attached Technical Memorandum follows accepted engineering practice and was completed under my direction. This Technical Memorandum summarizes results from an evaluation conducted on the access road leading to APN 222-071-027 per guidance from the Humboldt County Department of Public Works. The Delorme property is located approximately 8.2 miles from the Sproul Creek bridge where the County-maintained Category 4 road ends. Based on physical characteristics of the access road, the 8.2-mile access road to the Delorme property has been divided into 4 segments as follows:

- **Segment 1** – 5.2 miles of County-maintained road from Sproul Creek bridge to mile 5.2.
- **Segment 2 (Subject of this Technical Memorandum)** – 0.6 miles of private community-maintained road from end of the County-maintained road to mile 5.8.
- **Segment 3** – 1.0 mile of private community-maintained road from mile 5.8 to mile 6.8.
- **Segment 4** – 1.4 miles of private community-maintained road from mile 6.8 to mile 8.2 (Delorme property boundary).



Joel Monschke, P.E.  
Civil Engineer  
Stillwater Sciences

## 1 INTRODUCTION

Stillwater Sciences has been contracted to conduct road evaluation the proposed cannabis project on APN 222-071-027. On 26 April 2017, the field evaluation was conducted by Stillwater Sciences engineer (Joel Monschke). Information in this Technical Memorandum pertains to Segment 2 (See Figure 1) covering 0.6 miles of private community-maintained road from mile 5.2 to mile 5.8.

Road evaluation of this road segment involved road width measurements and photos taken at every 0.1 mile interval as well as observations and photos taken at additional locations where the road width appeared to be threatened by degrading infrastructure and/or drainage issues.

## 2 EXPECTED INCREASE IN USE DUE TO CANNABIS PROJECT

### 2.1 Cannabis Project on APN 222-071-027

The cannabis project proposed on APN 222-071-027 will not significantly increase traffic on the roads evaluated herein because cultivation covers a relatively small area (~6,096 SF) and is operated primarily by family members. As such, the project does not require significant imported materials or laborers in addition to typical homesteading activities.

### 2.2 Other Cannabis Projects in the Vicinity

Based on information provided to Stillwater Sciences by Humboldt County Department of Public Works, there are eight additional cannabis permit applications within the vicinity of the Delorme project. Seven of these pending applications all use the road (Segment 2) evaluated in this Technical Memorandum. All seven projects involve permitting existing cultivation, so the traffic is not likely to significantly increase compared to the last several years. However, it is expected that the cumulative impacts of all these projects will result in incremental increases in road use considering that several of the projects have proposed cultivation areas significantly larger than Delorme and that as farmers come into compliance they often significantly upgrade their operations.

### 2.3 Average Daily Traffic (ADT) Estimate

Stillwater Sciences' engineer estimated average daily trips based on traffic observations during the road evaluation, number of properties utilizing the access road, and engineering judgement. There are approximately 19 rural residential parcels that utilize Segment 2. If each parcel accounts for four trips per day, that equates to approximately 76 total trips per day (~six trips per hour during a typical 12-hour day (8 am to 8 pm)). This is generally consistent with the observations made during the road evaluation. While there are likely busier times of day, and busier periods of the year, we believe that this is a reasonably accurate estimate for this road evaluation.

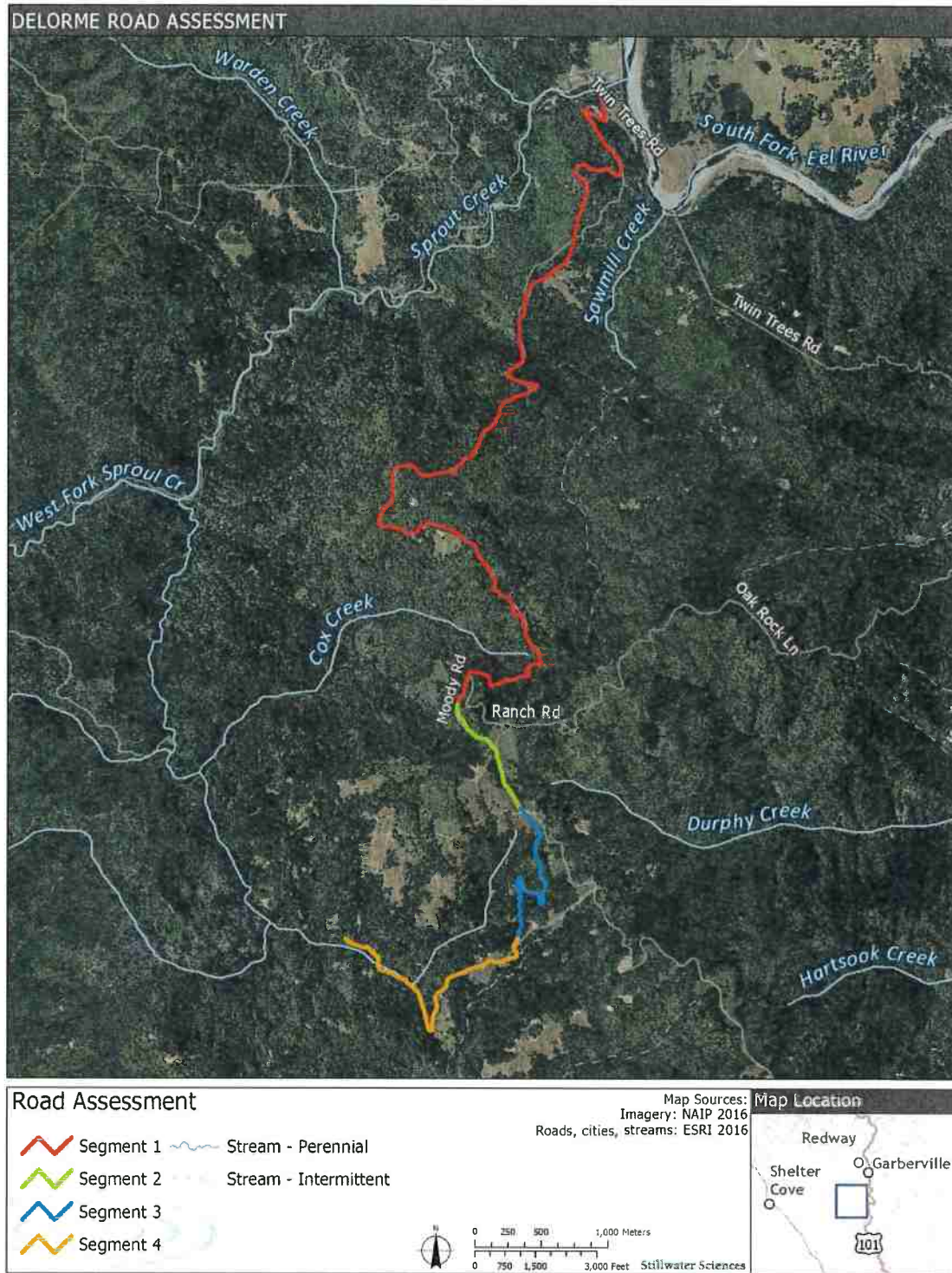


Figure 1. Road evaluation overview map.

### 3 FIELD OBSERVATIONS

#### 3.1 General Observations

Overall, the 0.6 miles of gravel-surfaced private community-maintained road is in relatively good condition and appears to be easily accommodating the current traffic load. There was no evidence of skid marks or scarred trees. This segment of road is generally 18' to 20' wide except for two pinch points as shown in the photos in Appendix A and described in Section 3.2 below.

#### 3.2 Description of Specific Road Segments

The following measurements were taken along this road segment at 0.1 mile intervals as shown on Figure 2:

- Mile 5.2: 12-ft-wide pinch point with no shoulder at start of private community-maintained road caused by trees on both sides of the road. The visibility is fair, but due to the narrow road width and mature trees growing directly adjacent to the road, this site does pose some safety concerns.
- Mile 5.3: 18-ft road width with 2-ft shoulders.
- Mile 5.4: 12-ft-wide pinch point with no shoulders located at the crest of a hill.
- Mile 5.5: 20-ft road width with 2-ft shoulder.
- Mile 5.6: 20-ft road width with 2-ft shoulder.
- Mile 5.7: 20-ft road width with 2-ft shoulder.
- Mile 5.8: 28-ft road width with 2-ft shoulder (end of segment).

### 4 RECOMMENDATIONS

#### 4.1 Specific Recommendations for this Road Segment

- Mile 5.2: We recommend removing trees and widening roadway to 20 ft with shoulders, need to consider environmental impacts (low priority).
- Mile 5.4: Adjacent driveways, fences, and steep topography make this site difficult to widen. We recommend adding signs reminding drivers to slow down and stay on the right side of the road (high priority).
- Mile 5.6: Concentrated road runoff is causing erosion on the outboard edge of the road near an existing culvert outlet. We recommend adding rock to the culvert outlet to prevent further loss of the road surface.

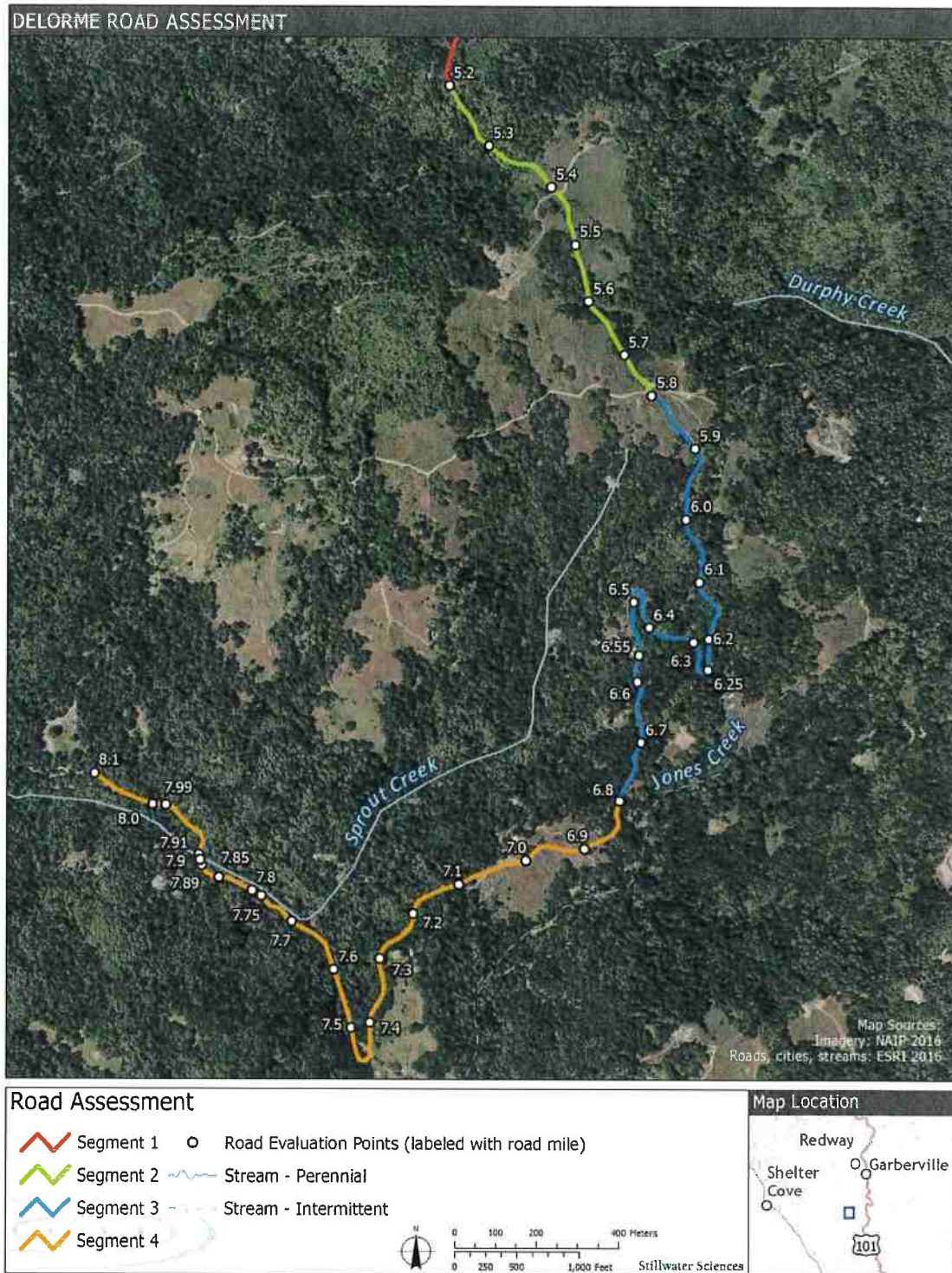


Figure 2. Road Segments 2-4 map.

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**Appendix A**  
**Photos**

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Photo 1. Mile 5.2: 12-ft-wide pinch point with no shoulder at start of private community-maintained road.



Photo 2. Mile 5.3: 18-ft road width with 2-ft shoulders.



Photo 3. Mile 5.4: 12-ft-wide pinch point with no shoulders.



Photo 4. Mile 5.5: 20-ft road width with 2-ft shoulder.



Photo 5. Mile 5.6: 20-ft road width with 2-ft shoulder.



Photo 6. Mile 5.6: Add rock to culvert outlet to prevent erosion of road surface.



Photo 7. Mile 5.7: 20-ft road width with 2-ft shoulder.



Photo 8. Mile 5.8: 28-ft road width with 2-ft shoulder (end of segment).

HUMBOLDT COUNTY DEPARTMENT OF PUBLIC WORKS  
ROAD EVALUATION REPORT

**PART A:** Part A may be completed by the applicant

Applicant Name: Gary Delorme APN: 222-071-027

Planning & Building Department Case/File No.: 10769

Road Name: Sproul Creek Road Segment 3 (complete a separate form for each road)

From Road (Cross street): Mile 5.2

To Road (Cross street): Mile 5.8

Length of road segment: 0.6 miles Date Inspected: 4/26/2017

Road is maintained by:  County  Other Private  
(State, Forest Service, National Park, State Park, BLM, Private, Tribal, etc)

Check one of the following:

**Box 1**  The entire road segment is developed to Category 4 road standards (20 feet wide) or better. If checked, then the road is adequate for the proposed use without further review by the applicant.

**Box 2**  The entire road segment is developed to the equivalent of a road category 4 standard. If checked, then the road is adequate for the proposed use without further review by the applicant.

*An equivalent road category 4 standard is defined as a roadway that is generally 20 feet in width, but has pinch points which narrow the road. Pinch points include, but are not limited to, one-lane bridges, trees, large rock outcroppings, culverts, etc. Pinch points must provide visibility where a driver can see oncoming vehicles through the pinch point which allows the oncoming vehicle to stop and wait in a 20 foot wide section of the road for the other vehicle to pass.*

**Box 3**  The entire road segment is not developed to the equivalent of road category 4 or better. The road may or may not be able to accommodate the proposed use and further evaluation is necessary. Part B is to be completed by a Civil Engineer licensed by the State of California.

The statements in PART A are true and correct and have been made by me after personally inspecting and measuring the road.



5/3/2017

Signature

Date

Joel Monschke

Name Printed

Important: Read the instructions before using this form. If you have questions, please call the Dept. of Public Works Land Use Division at 707.445.7205.

**PART B: Only complete Part B if Box 3 is checked in Part A. Part B is to be completed by a Civil Engineer licensed by the State of California. Complete a separate form for each road.**

Road Name: Sproul Creek Road Segment 3 Date Inspected: 4/26/2017 APN: 222-071-027  
 From Road: Mile 5.8 (Post Mile N/A ) Planning & Building Department Case/File No.:  
 To Road: Mile 6.8 (Post Mile N/A ) 10769

1. What is the Average Daily Traffic (ADT) of the road (including other known cannabis projects)?

Number of other known cannabis projects included in ADT calculations:  
 (Contact the Planning & Building Department for information on other nearby projects.) 5

ADT: 40 Date(s) measured: See explanation in Technical Memorandum Section 2.3

Method used to measure ADT:  Counters  Estimated using ITE *Trip Generation Book*

Is the ADT of the road less than 400?  Yes  No

If YES, then the road is considered very low volume and shall comply with the design standards outlined in the American Association of State Highway and Transportation Officials (AASHTO) *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400)*. Complete sections 2 and 3 below.

If NO, then the road shall be reviewed per the applicable policies for the design of local roads and streets presented in AASHTO *A Policy on Geometric Design of Highways and Streets*, commonly known as the "Green Book". Complete section 3 below.

2. Identify site specific safety problems with the road that include, but are not limited to: (Refer to Chapter 3 in AASHTO *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400)* for guidance.)

A. Pattern of curve related crashes.

Check one:  No.  Yes, see attached sheet for Post Mile (PM) locations.

B. Physical evidence of curve problems such as skid marks, scarred trees, or scarred utility poles

Check one:  No.  Yes, see attached sheet for PM locations.

C. Substantial edge rutting or encroachment.

Check one:  No.  Yes, see attached sheet for PM locations.

D. History of complaints from residents or law enforcement.

Check one:  No.  Yes ( check if written documentation is attached)

E. Measured or known speed substantially higher than the design speed of the road (20+ MPH higher)

Check one:  No.  Yes.

F. Need for turn-outs.

Check one:  No.  Yes, see attached sheet for PM locations.

3. Conclusions/Recommendations per AASHTO. Check one:

The roadway can accommodate the cumulative increased traffic from this project and all known cannabis projects identified above.

The roadway can accommodate the cumulative increased traffic from this project and all known cannabis projects identified above, if the recommendations on the attached report are done. ( check if a *Neighborhood Traffic Management Plan* is also required and is attached.)

The roadway cannot accommodate increased traffic from the proposed use. It is not possible to address increased traffic.

A map showing the location and limits of the road being evaluated in PART B is attached. The statements in PART B are true and correct and have been made by me after personally evaluating the road.

[Signature] Signature of Civil Engineer Date 5/3/2017

**Important: Read the instructions before using this form. If you have questions, please call the Dept. of Public Works Land Use Division at 707.445.7205.**



## TECHNICAL MEMORANDUM

DATE: 3 May 2017  
TO: Humboldt County Department of Public Works  
FROM: Joel Monschke, Stillwater Sciences  
SUBJECT: Road Evaluation for APN 222-071-027 (Gary Delorme Property):  
**Segment 3** - 1.0 miles of private community-maintained road from mile 5.8 to mile 6.8.

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I hereby state that all work described in the attached Technical Memorandum follows accepted engineering practice and was completed under my direction. This Technical Memorandum summarizes results from an evaluation conducted on the access road leading to APN 222-071-027 per guidance from the Humboldt County Department of Public Works. The Delorme property is located approximately 8.2 miles from the Sproul Creek bridge where the County-maintained Category 4 road ends. Based on physical characteristics of the access road, the 8.2-mile access road to the Delorme property has been divided into 4 segments as follows:

- **Segment 1** – 5.2 miles of County-maintained road from Sproul Creek bridge to mile 5.2.
- **Segment 2** – 0.6 miles of private community-maintained road from end of the County-maintained road to mile 5.8.
- **Segment 3 (Subject of this Technical Memorandum)** – 1.0 mile of private community-maintained road from mile 5.8 to mile 6.8.
- **Segment 4** – 1.4 miles of private community-maintained road from mile 6.8 to mile 8.2 (Delorme property boundary).



Joel Monschke, P.E.  
Civil Engineer  
Stillwater Sciences

## 1 INTRODUCTION

Stillwater Sciences has been contracted to conduct road evaluation the proposed cannabis project on APN 222-071-027. On 26 April 2017, the field evaluation was conducted by Stillwater Sciences engineer (Joel Monschke). Information in this Technical Memorandum pertains to Segment 3 (See Figure 1) covering 1.0 mile of private community-maintained road from mile 5.8 to mile 6.8.

Road evaluation of this road segment involved road width measurements and photos taken at every 0.1 mile interval as well as observations and photos taken at additional locations where the road width appeared to be threatened by degrading infrastructure and/or drainage issues.

## 2 EXPECTED INCREASE IN USE DUE TO CANNABIS PROJECT

### 2.1 Cannabis Project on APN 222-071-027

The cannabis project proposed on APN 222-071-027 will not significantly increase traffic on the roads evaluated herein because cultivation covers a relatively small area (~6,096 SF) and is operated primarily by family members. As such, the project does not require significant imported materials or laborers in addition to typical homesteading activities.

### 2.2 Other Cannabis Projects in the Vicinity

Based on information provided to Stillwater Sciences by Humboldt County Department of Public Works, there are eight additional cannabis permit applications within the vicinity of the Delorme project. Four of these pending applications use the road (Segment 3) evaluated in this Technical Memorandum. All four projects involve permitting existing cultivation, so the traffic is not likely to significantly increase compared to the last several years. However, it is expected that the cumulative impacts of all these projects will result in incremental increases in road use considering that at least one of the projects has a proposed cultivation area significantly larger than Delorme and that as farmers come into compliance they often significantly upgrade their operations.

### 2.3 Average Daily Traffic (ADT) Estimate

Stillwater Sciences' engineer estimated average daily trips based on traffic observations during the road evaluation, number of properties utilizing the access road, and engineering judgement. There are approximately 10 rural residential parcels that utilize Segment 3. If each parcel accounts for four trips per day, that equates to approximately 40 total trips per day (~three trips per hour during a typical 12-hour day (8 am to 8 pm)). This is generally consistent with the observations made during the road evaluation. While there are likely busier times of day, and busier periods of the year, we believe that this is a reasonably accurate estimate for this road evaluation.



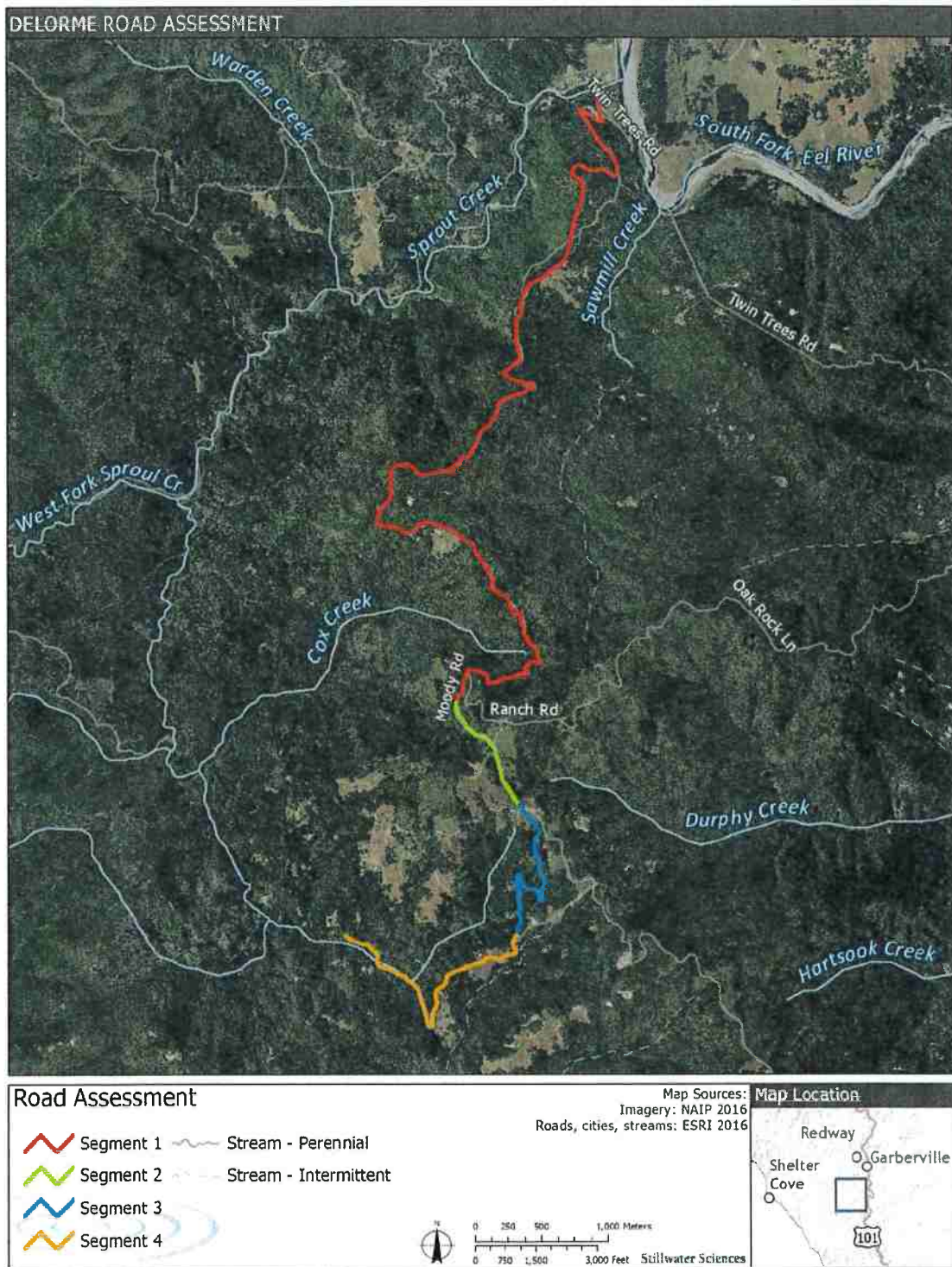


Figure 1. Road evaluation overview map.

### 3 FIELD OBSERVATIONS

#### 3.1 General Observations

There is significantly less use on this road segment due to numerous driveways turning off from road Segment 2 around miles 5.4 and 5.8. This 1.0 miles of gravel-surfaced private community-maintained road appears to be easily accommodating the current traffic load with no evidence of skid marks or scarred trees. This segment of road is generally 16' to 18' wide except for two 12' wide pinch points as shown in the photos in Appendix A and described in Section 3.2 below.

#### 3.2 Description of Specific Road Segments

The following measurements were taken along this road segment at 0.1 mile intervals as shown on Figure 2:

- Mile 5.8: 16-ft road width with 1-ft shoulder (begin of segment).
- Mile 5.9: 18-ft road width with 1-ft shoulders.
- Mile 6.0: 18-ft road width with 1-ft shoulders.
- Mile 6.1: 18-ft road width with 1-ft shoulders.
- Mile 6.2: 18-ft road width with 1-ft shoulder.
- Mile 6.3: 16-ft road width with 1-ft shoulder.
- Mile 6.4: 16-ft road width with 1-ft shoulder.
- Mile 6.5: 12-ft road width with 1-ft shoulder.
- Mile 6.6: 18-ft road width with 2-ft shoulders.
- Mile 6.7: 16-ft road width with 1-ft shoulder.
- Mile 6.8: 12-ft road width with no shoulder.

### 4 RECOMMENDATIONS

#### 4.1 Specific Recommendations for this Road Segment

- Mile 6.2: Inboard ditch erosion, new culvert at natural swale proposed to eliminate problem. (moderate priority)
- Mile 6.25: Culvert replacement proposed to widen pinch point. (moderate priority)
- Mile 6.3: inboard ditch erosion, new culvert at natural swale proposed to eliminate problem. (moderate priority)
- Mile 6.3: Culvert replacement proposed to widen pinch point (high priority).
- Mile 6.55: Culvert replacement proposed to widen pinch point (high priority).
- Mile 6.6: culvert replacement proposed at failing culvert that will eventually cause pinch point (high priority).
- Mile 6.7: inboard ditch erosion, new culvert at natural swale proposed to eliminate problem (moderate priority).

Note that all of the recommendations described above are currently permitted by the California Department of Fish and Wildlife (CDFW) and permitting is near final with the North Coast Regional Water Quality Control Board (NCRWQCB). Work will be implemented by the property

owner (APN 222-071-014) over the next several years in response to a Cleanup Order from the NCRWQCB.

#### **4.2 General Recommendations for this Road Segment**

Brushing of narrow road segments to improve visibility and safety especially adjacent to the two pinch points at miles 6.5 and 6.8 and to improve visibility around corners (high priority).

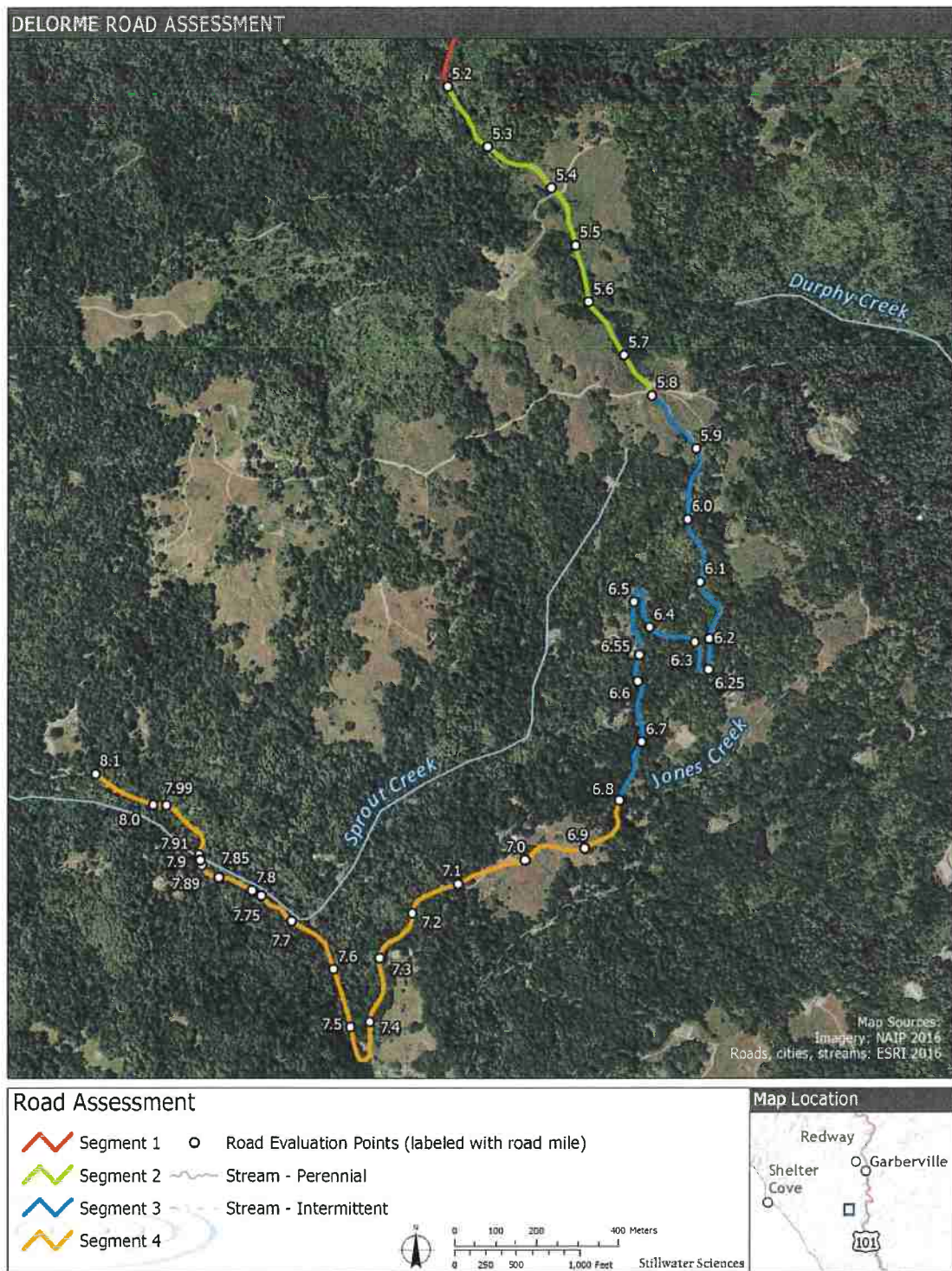


Figure 2. Road Segments 2-4 map.

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## **Appendix A**

### **Photos**

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Photo 1. Mile 5.8: 16-ft road width with 1-ft shoulder (begin of segment).



Photo 2. Mile 5.9: 18-ft road width with 1-ft shoulders.



Photo 3. Mile 6.0: 18-ft road width with 1-ft shoulders.

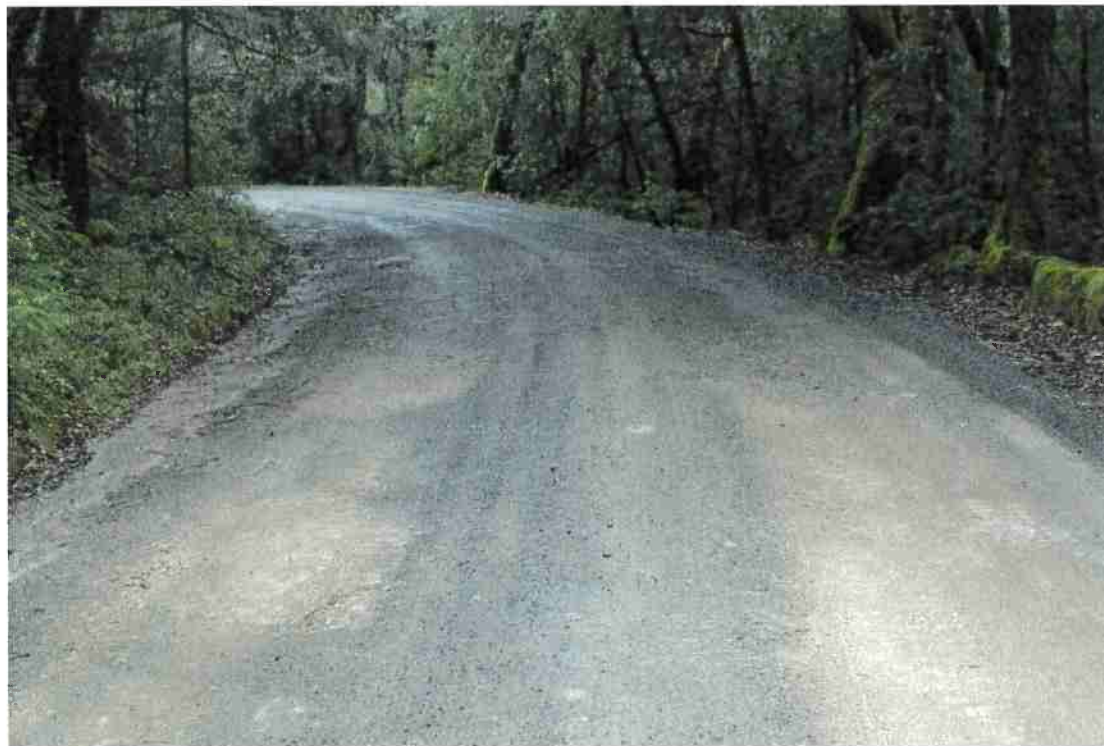
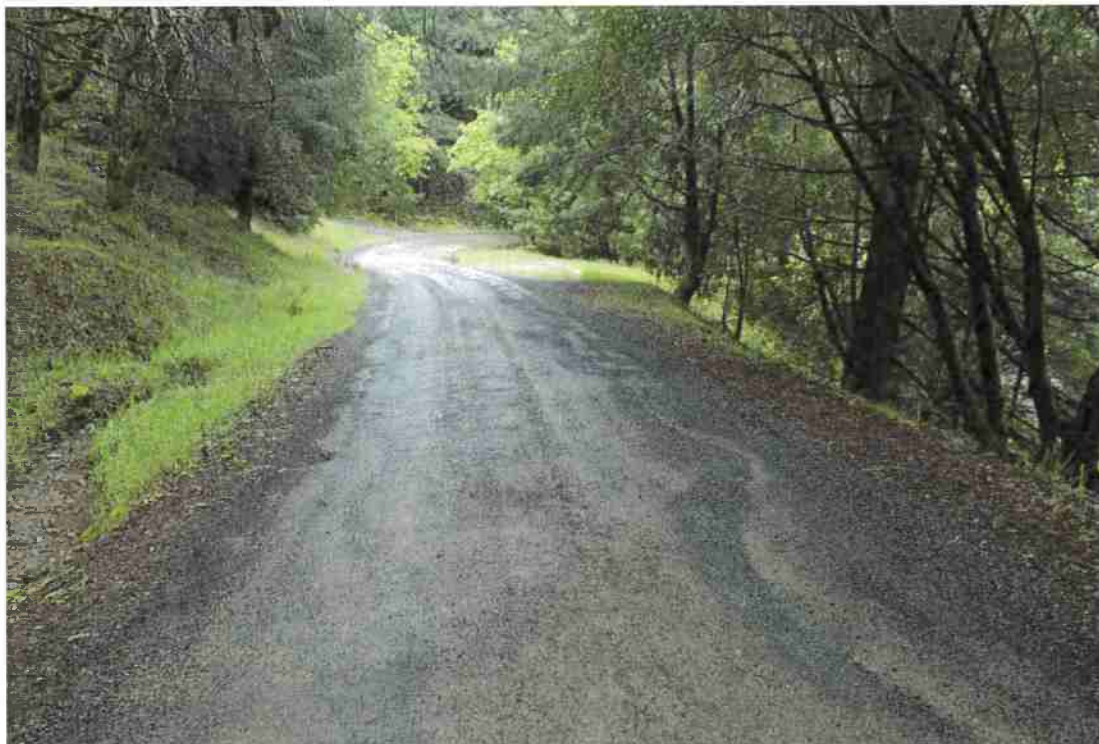


Photo 4. Mile 6.1: 18-ft road width with 1-ft shoulders.



**Photo 5.** Mile 6.2: Inboard ditch erosion, new culvert at natural swale proposed to eliminate problem.



**Photo 6.** Mile 6.2: 18-ft road width with 1-ft shoulder.





Photo 7. Mile 6.25: Culvert replacement proposed to widen pinch point.



Photo 8. Mile 6.3: 16-ft road width with 1-ft shoulder, Inboard ditch erosion, new culvert at natural swale proposed to eliminate problem.



Photo 9. Mile 6.3: Culvert replacement proposed to widen pinch point.



Photo 10. Mile 6.4: 16-ft road width with 1-ft shoulder.



Photo 11. Mile 6.5: 12-ft road width with 1-ft shoulder.



Photo 12. Mile 6.55: culvert replacement proposed to widen pinch point.



Photo 13. Mile 6.6: 18-ft road width with 2-ft shoulders.



Photo 14. Mile 6.6: Culvert replacement proposed on culvert that is failing and will eventually cause pinch point.



Photo 15. Mile 6.7: Inboard ditch erosion, new culvert at natural swale proposed to eliminate problem.



Photo 16. Mile 6.7: 16-ft road width with 1-ft shoulder.



Photo 17. Mile 6.8: 12-ft road width with no shoulder.