

DKS MEMORANDUM

DATE: December 12, 2019
TO: Rafael Martinez, Director of Transportation
FROM: John P. Long, P.E., T.E.
Cameron Shew, P.E., T.E.
SUBJECT: TIM Fee Major Update
Technical Memorandum 3A: Cannabis Production Trip Rates

Executive Summary

The County's Traffic Impact Mitigation (TIM) Fee Program allocates the cost of roadway improvements based on the number of new vehicle trips generated in the PM peak hour for various land use types. For non-residential development, current land use categories include general commercial, hotel/motel/B&B, church, office/medical, and industrial/warehouse.

Most non-residential development generally falls into one of these above listed categories, although a "per trip" fee may be charged when the County determines that use of the categories is not appropriate. This may be due to an uncommon land use or any other factors that, at the County's sole discretion, render the category unrepresentative of the expected trip generation of the proposed land use.

Cannabis production, including growing and processing cannabis products, is an emerging industry in El Dorado County. Like other industrial uses, cannabis producers generate employment and delivery-related trips that use the County's roadways, and should pay a fair share toward improving those roadways. County staff asked their consultant (DKS Associates) to evaluate whether cannabis production should be considered a unique land use meriting its own category in the TIM Fee Program, or whether it should be considered under an existing category. DKS presents the County with two options that are both justified by engineering data:

- Approach 1: Classify cannabis production as an "industrial/warehouse" use and pay the appropriate TIM Fee for that category.
- Approach 2: Create a new cannabis production category, based on ITE *Trip Generation* data for manufacturing uses and no assumption of pass-by traffic

County staff and DKS request direction on whether Approach 1 or Approach 2 should be applied for cannabis production in the TIM Fee Program Major Update.

Background

Like most development fee programs, the County's Traffic Impact Mitigation (TIM) Fee Program allocates the cost of roadway improvements by land use type based on the concept of "equivalent dwelling units" (EDU). An EDU equals the demand placed on the transportation network relative to one single family dwelling unit which is assigned an EDU of 1. Land uses which have greater overall traffic impacts than a typical single-family residential unit are assigned values greater than 1, while land uses with lower overall traffic impacts are assigned values less than 1.

Like most development fee programs, the County's TIM Fee Program bases its EDUs on the number of vehicle trips generated by a given land use during the PM peak hour. This is

because roadway needs are primarily based on traffic flows and conditions during the PM peak hour on a typical weekday. Vehicle trips are derived from studies compiled and vetted by the Institute of Transportation Engineers (ITE), which measure the vehicle trips entering and leaving a specific development.

The current fee program has the following categories for non-residential development:

- General Commercial
- Hotel/Motel/B&B
- Church
- Office/Medical
- Industrial/Warehouse

One land use of interest that is not listed as a non-residential development of the current TIM fee program is cannabis production. ITE has published trip generation data for marijuana dispensaries under ITE Land Use Code 882. However, El Dorado County does not allow dispensaries (i.e. retail sales to consumers) in any unincorporated area. Cannabis production is understood to include the industrial operations of growing/processing cannabis and packaging/storing products for distribution to authorized sellers. While cannabis production is not prohibited in the County, ITE has not collected or published trip generation data specifically relating to this land use.

Analysis

Whether or not cannabis production has unique trip generation patterns has been a recent topic of discussion in the transportation engineering community. A review of ITE forums (see Appendix) and case studies indicates a general consensus that cannabis production can be considered to be a light industrial use. Gross floor area and number of employees are the most commonly used variables for trip generation of light industrial uses. Because employment is more difficult to project, the County typically calculates trip generation by gross floor area.

Based on a review of the current state of the practice and descriptions of land use categories provided in ITE's *Trip Generation Manual, 10th Edition*, DKS offers the following two approaches for the County's consideration:

Approach 1: Classify Cannabis Cultivation as an Industrial/Warehouse Use

The County's current Industrial/Warehouse category is based on ITE land use code 110 "General Light Industrial," with gross floor area as the independent variable. ITE describes the category as follows: "*A light industrial facility is a free-standing facility devoted to a single use. The facility has an emphasis on activities other than manufacturing and typically has minimal office space. Typical light industrial activities include printing, material testing, and assembly of data processing equipment.*"

The PM peak hour trip rate for general light industrial is 0.63 trips per 1,000 square feet gross floor area in the most recent *Trip Generation Manual, 10th Edition*. The County currently applies a 21% pass-by trip reduction to the industrial/warehouse category, resulting in a preliminary EDU factor of 0.51. Adopting Approach 1 would not change the number of fee categories, but would result in a lower fees than the County could justifiably charge under Approach 2.

Approach 2: Create New Cannabis Production Category, based on Manufacturing Trip Generation

ITE land use code 140 "Manufacturing" is described as follows: "A *manufacturing facility is an area where the primary activity is the conversion of raw materials or parts into finished products. Size and type of activity may vary substantially from one facility to another. In addition to the actual production of goods, manufacturing facilities generally also have office, warehouse, research, and associated functions.*"

The PM peak hour trip rate for manufacturing is 0.67 trips per 1,000 square feet gross floor area in the most recent *Trip Generation Manual, 10th Edition*. Because cannabis production does not allow for retail sales, no pass-by trip reduction is appropriate. A new "cannabis production" category results in a preliminary EDU factor of 0.68. Adopting Approach 2 would add an additional fee category for cannabis production, which would be approximately 33 percent higher, per square foot, than the industrial/warehouse fee.

Recommended Action: DKS Associates and County Staff recommend the Board consider and adopt either Approach 1 or Approach 2 to account for cannabis production in the TIM Fee Program Major Update.

Appendix: ITE Forum Discussion



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Cannabis Cultivation Trip Generation

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Ms. Trisha Munoz E.I.T 11 days ago

[Has anyone done trip generation for Cannabis Cultivation Facility? We are searching for trip ge...](#)

1. Cannabis Cultivation Trip Generation

0

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[Ms. Trisha Munoz E.I.T](#)

Actions ▾

Posted 11 days ago

Reply



Has anyone done trip generation for Cannabis Cultivation Facility?

We are searching for trip generation rates (e.g., daily, AM and PM rates, the independent variable is based on something we can measure, etc.).

 Trisha Munoz E.I.T.
 Engineer II
 David Evans and Associates, Inc.
 Victorville CA
Tnm@deainc.com



2. RE: Cannabis Cultivation Trip Generation

0	Recommend
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PTOE

Mr. Matthew Delich P.E., PTOE

Actions ▼

Posted 10 days ago

Reply	▼
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We have used light industrial, with floor area or number of employees as the variable. I would advise negotiating something with the review agency before you start.

 Matthew Delich P.E., PTOE
 Consulting Engineer

Delich Associates
Loveland CO
matt@delichassoc.com

➤ Original Message



3. RE: Cannabis Cultivation Trip Generation

0 Recommend



Ms. Trisha Munoz E.I.T

Actions ▼

Posted 9 days ago

Reply ▼

Matthew,

Thank you for replying. This seems to be the consensus on a few studies I have found through a google search.

Trisha Munoz E.I.T.
Engineer II
David Evans and Associates, Inc.

Victorville CA
Tnm@deainc.com

➔ Original Message



4. RE: Cannabis Cultivation Trip Generation

0 Recommend



Mr. Gholamreza Sayyadi

Actions ▼

Posted 10 days ago

Reply ▼

Hi,
First Principle approach can be a solution.
estimate number of employees, workers, maintenance and operation, visitors, etc. try to be accurate as much as you can

Gholamreza Sayyadi
Student
York University

reza.sayyd@gmail.com

➤ Original Message



5. RE: Cannabis Cultivation Trip Generation

0 Recommend



Ms. Trisha Munoz E.I.T

Actions ▼

Posted 6 days ago

Reply ▼

Gholamreza,

Thank you for your comment.

 Trisha Munoz E.I.T.
 Engineer II
 David Evans and Associates, Inc.
 Victorville CA
Tnm@deainc.com

➤ Original Message



6. RE: Cannabis Cultivation Trip Generation

0 Recommend



MENTEE
Mr. Tyler Krage P.E

Actions ▼

Posted 9 days ago

Edited by Tyler Krage 7 days ago

Reply ▼

[Comment deleted by user - pertained to dispensary trip gen, not cultivation trip gen]

➤ Original Message



7. RE: Cannabis Cultivation Trip Generation

0 Recommend



Mr. Frank Berry P.Eng

Actions ▼

Posted 7 days ago

Reply ▼

We have done a number of projects throughout Southwestern Ontario, varying in size from 20 employees to over 200. The latest involved a facility producing edible products within an existing grow and production operation. The key variables are number of employees and shift times. You have to get these from the owner. Truck movements are not usually significant.

Frank R. Berry, P.Eng. FellowITE (Life)

F. R. Berry & Associates

Frank Berry P.Eng.
Principal
F. R. Berry & Associates
London ON
fyberry@rogers.com

► Original Message



8. RE: Cannabis Cultivation Trip Generation

0 Recommend



Ms. Trisha Munoz E.I.T

Actions ▾

Posted 6 days ago

Reply ▾

Frank,

Thank you.

Trisha Munoz E.I.T.
Engineer II
David Evans and Associates, Inc.
Victorville CA
Tnm@deainc.com

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