Modifications to BMPs and erosion control measures would need to be updated in the SWMP; these modifications would be updated with coordination through the Proponent to ensure compliance with the SWPPP is maintained through the reclamation process.

3.4 Soil Storage

The salvaged topsoil shall be stored separately from subsoil or other material excavated from the pipeline trench and cut/fill slopes. Windrowing of topsoil and subsoil separately shall be implemented whenever topography allows. Topsoil must not be mixed or covered with subsoil material and should not be used to pad the pipeline. Dry drainages or washes that cross the construction area, should not be blocked with topsoil or subsoil piles. Specifically, topsoil and subsoil should be placed outside of the Ordinary High Water Mark (OHWM) of drainages. Gaps should be left at regular intervals in the windrowed topsoil to avoid ponding and diversion of natural runoff during storm events.

3.5 Trenching

Along extended sloping areas of the pipeline, trenchbreakers (sandbags) should be installed in the trench and around the HDPE pipeline to prevent waters from flowing down the trenchline and prevent subsurface soil erosion (aka "piping").

3.6 Soil Replacement

After the pipe has been successfully placed in the trench, backfilling would occur. The trench would generally be backfilled with the subsoil previously excavated from the trench, except in rocky areas where appropriate fill material may be needed. The pipeline trench surface is assumed to be left relatively level for long-term access by tamping or walking with a wheeled or tracked vehicle. Compaction would be performed until there are no voids in the trench. Any excess excavated materials or materials unfit for backfill should either be utilized elsewhere or shallowly mounded on the trench (to help avoid trenchline settling issues) and then covered with topsoil, as described below.

Cut and fill slopes should be left very rough. Dirt should have large divots and soil humps being approximately 1-foot deep or tall. Recontouring to a rough texture helps trap broadcast seed and moisture and helps match the surrounding landscape.

A minimum of 12 inches of topsoil would be replaced unless site conditions preclude this depth. Topsoil should also be left very rough. Soils should not be worked when wet to avoid mixing, loss of topsoil, and erosion issues.

3.7 Soil Amendments

Based on desired establishment of reclamation species, soil samples were submitted for standard agronomic testing in April 2019. The tests evaluated texture, pH, organic matter, cation exchange capacity (CEC), alkalinity, salinity, and basic nutrients (nitrogen, phosphorus, potassium [NPK]). The reclamation contractor will acquire and apply soil amendments. Based on the existing soil conditions and desired reclamation success, the following will be applied to needed areas (see **Figure 2** and **Appendix A**).

- Triagenics Biotic Soil Media (BSM) in "Amendment Areas" see **Figure 2.**
    - Fertilizer (3:6:3) would be mixed in with BSM.

Given the poor soil conditions, seed germination would be very poor in these areas, and to establish vegetation some amendments would be needed. This mix can be sprayed on the soil surface. Based on the occurrence of poorer soils areas, approximately 0.37 acres should receive treatments with spray-on soil amendments.

Figure 2. Soil Amendments and Hydromulch Areas

3.8 Seeding

3.8.1 Temporary Seed Mix

Final seeding is best done in the late fall; therefore, if construction occurs in the summer, it may be desirable to apply a temporary seed mix to the area to help minimize erosion and provide some site stabilization. Temporary seed mixes are relatively inexpensive, and the large seeds germinate quickly. Two recommended varieties include:

- Annual rye (*Lolium multiflorum*)
- Regreen (a wheat and wheatgrass cross)

Seeding can occur at a rate of around 20 lbs. per acre.

3.8.2 Long-term/Permanent Seed Mixes

Seeding should occur in the late fall to avoid seeds from germinating in the summer or fall, and then either desiccating or freezing. Drill seeding could be utilized on pastures and more level terrain, but broadcast seeding would likely be needed on steeper slopes. Drill seeding will be the preferred method where equipment access is feasible; seed would be placed in direct contact with the soil at an average depth of 0.5 inch. For drill seeding applications, small seeds shall be packaged separately to allow for separate application. Small seeds should be planted no deeper than 0.25 inch or should be broadcast.

Broadcast seeding would be employed in areas where drill seeding is not possible. Seed would be uniformly applied over the disturbed areas with manually operated cyclone-bucket spreaders or mechanical spreaders. The following Native Shrubland seed mix is a relatively "simple" mix, additional species may be added, see **Figure 3** for seeding locations.

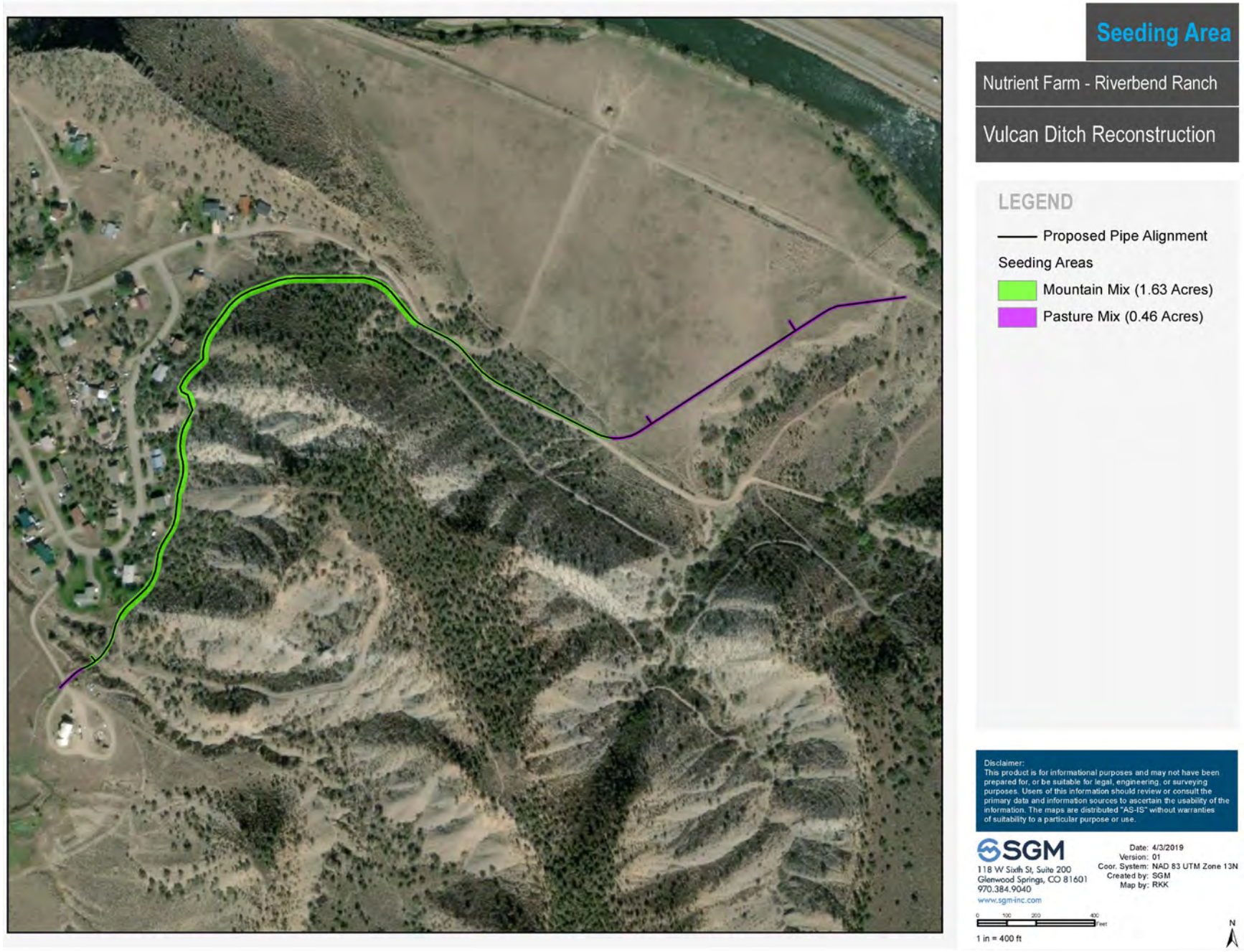
Table 1. Native Shrubland Seed Mix

Common Name	Scientific Name	Variety	PLS lbs/acre
Shrubs			
Fourwing saltbush	*Atriplex canescens*	VNS	5
Grasses			
Indian ricegrass	*Achnatherum (Oryzopsis) hymenoides*	White River, Paloma, rimrock	8
Bottlebrush squirreltail	*Elymus elymoides*	State Bridge, Little Sahara	5
Sandberg bluegrass	*Poa sandbergii, Poa secunda*	UP Colorado, VNS	1

Broadcast seeding rates should be approximately 120 pure live seeds (PLS) per square foot if broadcasted.

For pasturelands, typical irrigated (or dryland) cultivar mixes would be appropriate, seeded at rates of approximately 15 lbs/acre.

Figure 3. Seeding Areas and Mixes



3.9 Mulching

In steeper areas and on south facing slopes (see **Figure 2. Soil Amendments and Hydromulching Areas**), we recommend the use of mulching to maximize moisture retention, reduce wind and water erosion, and improve the chances for revegetation success. Hydromulch should be applied after soil amendments and seeding has occurred; sometimes seed can also be mixed in with the hydromulch, but not more than 10% of the seed. Hydromulch should be applied evenly on steeper slope areas, at a rate of 3,000 to 3,500 lbs/acre. Approximately 1.28 acres should be hydromulched.

Attached to this document is a specification sheet for EcoMatrix, available from Triton Environmental in Grand Junction.

3.10 Touch Up Seeding/Monitoring

Given the steep slopes and poor soils, the landowner should monitor the reclamation area for erosion issues, patches where seed failed to germinate, and other issues. While using native seed mixes provide the best chance for long term site reclamation, native seeding projects often take two to three years before good establishment is realized. During that time, if there are areas where there is no obvious seed germination, additional "spot seeding" should be considered in the fall.

3.11 Noxious Weeds

Cheatgrass (*Anisantha tectorum*) and Russian knapweed (*Centaurea repens*) were present along the ditch alignment; with ditch piping and earthmoving, these species will likely become aggressive, and it wouldn't be surprising to see a flush of new growth. However, timely treatment of these species (especially the knapweed) and dramatically help with control. The landowner should plan on treating the knapweed every June, and the cheatgrass in the early winter (late October) until good control is attained.

4.0 Appendix A – Product Specification Sheets

TriGanics
Biotic Soil Media

Solutions for your Environment™

GREEN DESIGN ENGINEERING™
EARTH-FRIENDLY SOLUTIONS FOR SUSTAINABLE RESULTS™

Description

TriGanics Biotic Soil Media™ (BSM™) is designed as an alternative to topsoil to accelerate development of depleted soils/substrates with low organic matter, low nutrient levels and limited biological activity. This Engineered Soil Media™ (ESM™) helps improve soils for vegetative establishment and more effective erosion control. TriGanics is non-toxic with bark and wood fibers that have been phyto-sanitized to eliminate potential weed seeds and pathogens - prior to the introduction of soil building components.

Recommended Applications

- Development of Soils with Low Organic Matter (< 5%)
- Rapid Establishment and Sustained Growth of Vegetation
- Replacement of Costly or Difficult to Obtain Topsoil
- Replacement of Compost, Peat, Manure and Other Sources of Organic Material
- Typically Installed Beneath Hydraulically-applied and Rolled Erosion Control Products (HECPs and RECPs) as Growing Media.

Soil Building and Revegetation

Mix seed and specified Prescriptive Agronomic Formulations at recommended rates in approved hydraulic seeding/ mulching equipment when water has reached approximately 1/3 of the working capacity. Add TriGanics Biotic Soil Media at a rate of 100 pounds per 100 gallons of water (45 kg / 379 L) on hydraulic equipment with gear or positive displacement pumps and 75 pounds per 100 gallons of water(34 kg / 379 L) on centrifugal pumps while agitating; add fertilizer when the tank is approximately 3/4 full. Apply over properly prepared surfaces that are deemed geotechnically stable. Confirm specific material loading rates with equipment manufacturer.

Erosion Control Solution

Apply TriGanics as directed above being sure to include all Prescriptive Agronomic Formulations, fertilizer and seed at their recommended rates. Apply EcoFlex™ HP-FGM™, EcoMatrix™ EFM™, or RECP over TriGanics as directed by manufacturer's recommendation. Follow all manufacturer's product selection guidelines or go to www.ProfilePS3.com for assistance.

Technical Data

Physical Properties*	Test Method	Units	Typical Value
Organic Material	ASTM D586	%	> 90
Mass/Unit Area	ASTM D6566[1]	g/m^2 (oz/yd^2)	392 (11.6)
Water Holding Capacity	ASTM D7367	%	> 500
pH	ASTM D1293	n/a	6.0 ± 1.0
Material Color	Observed	n/a	Brown
Environmental Properties*	**Test Method**	**Units**	**Typical Value**
Ecotoxicity	EPA 2021.0	%	48-hr LC_{50} > 100%
Product Composition			**Typical Value**
Thermally Processed Bark and Wood Fibers[2] (within a pressurized vessel)			94%
Proprietary blend of Polysaccharide Polymers, Biochar, Seaweed Extract, Humic Acid and Endomycorrhizae			6%
Moisture Content			12%

* When uniformly applied at a rate of 3,500 pounds per acre (3,900 kilograms/hectare) under laboratory conditions. 1. ASTM test methods developed for Rolled Erosion Control Products that have been modified to accommodate Hydraulic Erosion Control Products. 2. Heated to a temperature greater than 380 degrees Fahrenheit (193 degrees Celsius) for 5 minutes at a pressure greater than 50 psi (345 kPa) in order to be Thermally Refined™/ Processed and to achieve phyto-sanitization.

Packaging Data

Properties	Test Method	Units	Nominal Value
Bag Weight	Scale	kg (lb)	22.7 (50)
Bags per Pallet	Observed	#	40

UV and weather-resistant plastic bags. Pallets are weather-proof stretch wrapped with UV resistant pallet cover.

Profile Products
750 Lake Cook Road, Ste. 440
Buffalo Grove, IL 60089
800-508-8681 or +1-847-215-3464
www.profileproducts.com

EcoMatrix™

Engineered Fiber Matrix

Solutions for your Environment

GREEN DESIGN ENGINEERING™
EARTH-FRIENDLY SOLUTIONS FOR SUSTAINABLE RESULTS™

Description

EcoMatrix™ Engineered Fiber Matrix™ (EFM) is a biodegradable bonded fiber matrix composed of 100% recycled Thermally Refined™ wood fibers, crimped interlocking biodegradable fibers, and naturally derived biopolymers. EcoMatrix is phytosanitized, free from harmful plastic nettings, and when cured forms an intimate bond with the soil surface to create a continuous, porous, absorbent and flexible erosion resistant blanket that allows for rapid germination and accelerated plant growth. EcoMatrix may require a 24-48 hour curing period to achieve maximum performance.

Recommended Applications

- Erosion control for slopes ranging from mild to steep (≤1H:1V)
- Meets or exceeds performance of bonded fiber matrix (BFM)
- Equivalent performance to most erosion controlled blankets
- Rough graded slopes
- Enhancement of vegetation establishment

Technical Data

Physical Properties*	Test Method	Units	Minimum Value
Mass/Unit Area	ASTM D6566[1]	g/m^2 (oz/yd^2)	> 393 (11.6)
Thickness	ASTM D6525[1]	mm (in)	> 4 (0.16)
Ground Cover	ASTM D6567[1]	%	> 98
Water Holding Capacity	ASTM D7367[1]	%	> 1200
Material Color	Observed	n/a	Green
Performance Properties*	**Test Method**	**Units**	**Value**
Cover Factor[2]	Large Scale[4]	n/a	< 0.05
Percent Effectiveness[3]	Large Scale[4]	%	> 95
Cure Time	Observed	hours	24-48
Vegetation Establishment	ASTM D7322[1]	%	> 600
Environmental Properties*	**Test Method**	**Units**	**Typical Value**
Functional Longevity[5]	ASTM D5338	n/a	Up to 12 months
Ecotoxicity	EPA 2021.0	%	48-hr LC_{50} > 100%
Biodegradability	ASTM D5338	%	100
Product Composition			**Typical Value**
Thermally Processed Wood Fiber[6]			77 %
Wetting Agents - including high-viscosity, colloidal polysaccharide based tackifier (>10% of total formulation)			18 %
Crimped, Biodegradable Interlocking Fibers derived from plant sugars			2.5 %
Proprietary Mineral Activator			2.5 %

* When uniformly applied at a rate of 3500 pounds per acre (3900 kilograms/hectare) under laboratory conditions. 1. ASTM test methods developed for Rolled Erosion Control Products that have been modified to accommodate Hydraulic Erosion Control Products. 2. Cover Factor is calculated as soil loss ratio of treated surface versus an untreated control surface. 3. % Effectiveness = One minus Cover Factor multiplied by 100%. 4. Large scale testing conducted at Utah Water Research Laboratory and Texas Transportation Institute. For specific testing information please contact a Profile technical service representative at 800-508-8681 or +1-847-215-3464. 5. Functional Longevity is the estimated time period, based upon field observations, that a material can be anticipated to provide erosion control and agronomic benefits as influenced by composition, as well as site-specific conditions, including; but not limited to temperature, moisture, light conditions, soils, biological activity, vegetative establishment and other environmental factors. 6. Heated to a temperature greater than 380 degrees Fahrenheit (193 degrees Celsius) for 5 minutes at a pressure greater than 50 psi (345 kPa) in order to be Thermally Refined™/Processed and to achieve phytosanitization.

Packaging Data

Properties	Test Method	Units	Nominal Value
Bag Weight	Scale	kg (lb)	22.7 (50)
Bags per Pallet	Observed	#	40

UV and weather-resistant plastic bags. Pallets are weather-proof stretch wrapped with UV resistant pallet cover.

Profile Products LLC
750 Lake Cook Road, Ste. 440
Buffalo Grove, IL 60089
800-508-8681 or +1-847-215-3464
www.profileproducts.com

SOUND MODELING AND TESTING REPORT

NUTRIENT FARM PUD
NUTRIENT HOLDINGS LLC
GARFIELD COUNTY, CO

December 9, 2020

Prepared by

SGM

118 West Sixth Street, Suite 200
Glenwood Springs, CO 81601
970.945.1004
970.945.5948 fax

#2018-271.002

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1.0 Introduction

This report provides a sound testing assessment of the proposed music venue and off-highway vehicle (OHV) track within the Nutrient Farm PUD in relation to surrounding lands, existing residential areas, and how the proposed venues adhere to guidance in the Colorado Revised Statutes (CRS) 25-12-103. The sound testing process includes currently proposed locations of the music venue and Moto Park.

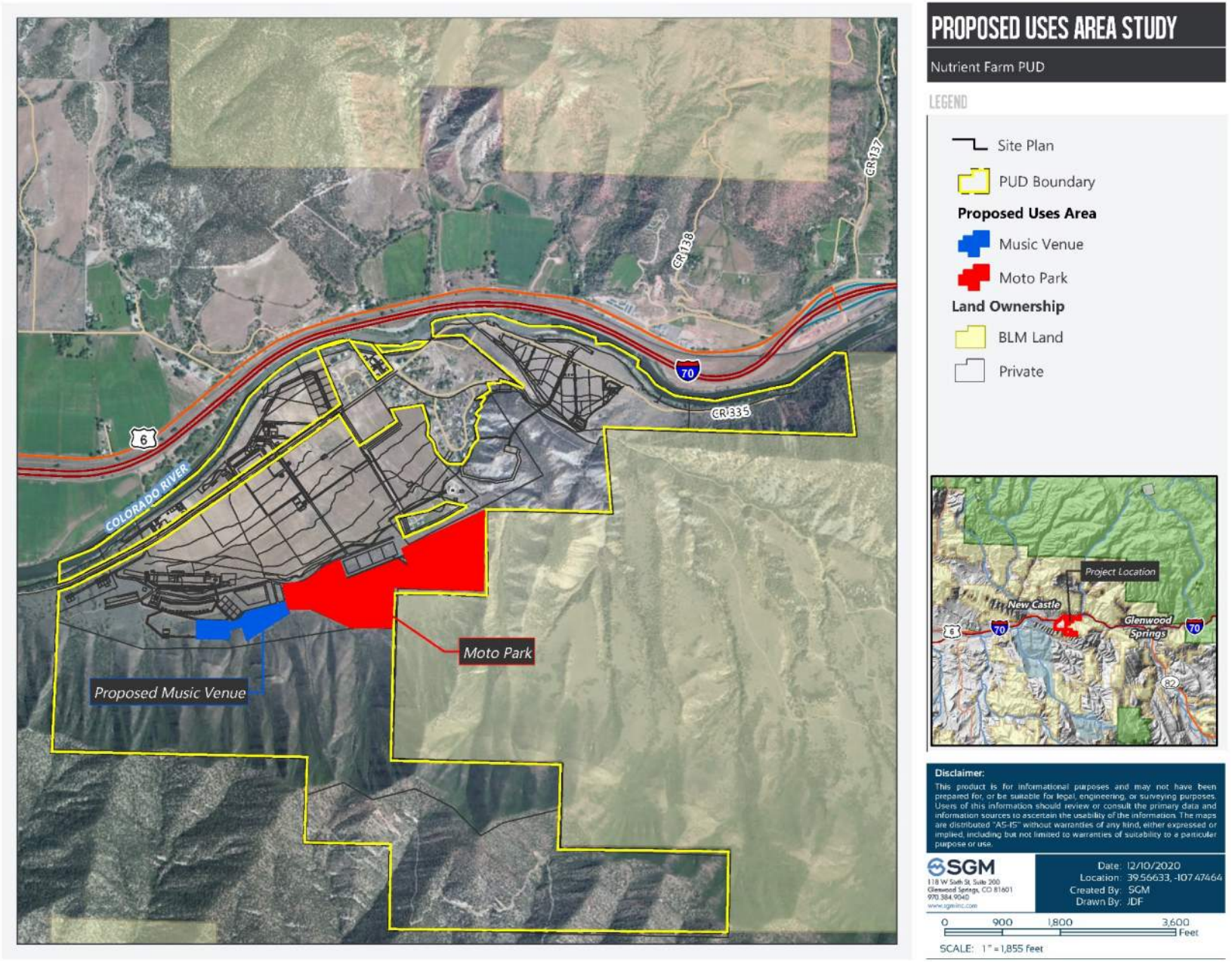
The Nutrient Farm PUD and the proposed music venue and Moto Park area are located on the south side of the Colorado River between New Castle and Glenwood Springs (39.56033°N, -107.48101°W; **Figure 1**), immediately adjacent to the Riverbend Community. The site is currently dominated by grazed pastures and undeveloped hillsides on the southern side of the pastures.

Nutrient Farm would be an approximately 1,136-acre, agriculturally oriented mixed-use PUD that revolves around the use and enjoyment of a working farm with multi-use education, entertainment, and recreational facilities (Nutrient Farm PUD Guide 2020). The PUD would include a working farm, a mix of residential homes, a commercial/industrial area, outdoor adventure parks with outdoor entertainment/music venue, an Moto Park, a campground, lodge, non-motorized trails, and a retreat/spa facility.

The following is provided in this report:

- A brief introduction to the fundamentals of sound
- A review of applicable State and County sound standards
- Existing conditions
- Discussion of sound testing methodology and results

Figure 1-1: Proposed Use Areas Study



2.0 Sound Fundamentals

Sound is most commonly experienced by people as pressure waves passing through the air. These rapid changes in air pressure are processed by the human ear as the sensation of sound. The rate at which the pressure fluctuates is called the frequency. Frequency is measured as the number of oscillations per second, or Hertz (Hz). Audible frequencies range from 20 – 20,000 Hz for a healthy human ear. Pitches at the lower end of this range are commonly experienced as a “rumble” or a “boom.” Pitches at the higher end or the range might be described as a “screech” or a “hiss”. Lower frequencies can have other impacts, such as causing windows to rattle and similar effects.

Sound can vary in volume as well as in pitch. This volume is usually expressed as decibels (dB). The sound you hear generally comes in two forms. Environmental sound generally comes from a variety of distant sources, such as distant traffic, wind in trees, and distant industrial or farming activities. Distant sound sources such as these create a low-level “background sound” in which no individual source is identifiable. Background sound stays relatively constant moment to moment but can vary through the day in accordance with natural forces or the daily pattern of human activity. Superimposed on this background sound is a succession of distinct, identifiable noisy events of brief duration. This can include the passing of single vehicles, aircraft flyovers, and the passage of sirens. Detailed acoustical terms have been provided in **Appendix A – Glossary of Acoustical Terms**.

3.0 Proposed Music Venue and Moto Park

The outdoor music venue, recreational facilities including motorized tracks, trail and outdoor adventure parks would introduce different land uses and human activity patterns to the area, including increased noise from both the music venues and the motorized tracks. The location of both the music venue and motorized tracks are along the base of the Grand Hogback, away from residential development.

The music venue would consist of performance areas including a small, raised platform, facing the steep slopes/hogback to the south. The venue would host a variety of music types (rock, country, acoustical, electronica, etc.), with amplification also being variable. Nutrient Farm is also planning to include additional sound dampening through the planting of trees, potential berming, and aiming/focusing speakers southwest (away from residential areas). Music events will be relatively small with approximately 50 people, however some music festivals will be planned with up to 350 people in attendance.

The Moto Park would be used by 100% electric vehicles only. These vehicles create virtually no noise at close proximity and are guaranteed by Nutrient Farm not to become a sound nuisance. A list of Electric OHVs are listed below:

- Future Motion Onewheel XR+ (already owned)
- Zero FX motorcycle (already owned)
- Tesla unnamed 4x4 (will be available in 2021)

Similar to the music venue, Nutrient Farm is planning to construct earth berms and planting vegetation to create sound dampening/insertion loss. After further testing, if gasoline-powered vehicles can prove to not become a sound nuisance, Nutrient Farm may elect to allow customers to bring their own gasoline-powered vehicles to the park.

4.0 CRS 25-12-103 Noise Standards

SGM initially conducted a sound modelling analysis. The modeling analysis was developed to predict operational sound levels at adjacent properties and verify compliance of operations with the Colorado Revised Statutes (CRS) 25-12-103 noise standards. The CRS code establishes permissible sound levels by type of property and time of day. For the purposes of the law, sound is measured as "*Levels of sound radiating from a property line at a distance of twenty-five feet*" and any sound "*In excess of the dB(A) established for the following time periods and zones shall constitute prima facie evidence that such sound is a public nuisance.*" Defined sound levels are provided in **Table 4-1**.

Table 4-1: CRS 25-12-103 Sound Standards

Zone	***7:00 a.m. to next 7:00 p.m.***	***7:00 p.m. to next 7:00 a.m.***
Residential	55 dB(A)	50 dB(A)
Commercial	60 dB(A)	55 dB(A)
Light Industrial	70 dB(A)	65 dB(A)
Industrial	80 dB(A)	75 dB(A)

The stringency of the sound requirements depends on the zoning of the site; however, the CRS 25-12-103 does not reference "PUD zoning", which is how Garfield County has zoned this area. For the

purposes of classifying the nearby Riverbend community, we assume a Residential zone, per CRS 25-12-103.

5.0 Music Venue and Moto Park Sound Modeling

5.1 Music Venue Sound Modeling Methodology

The SGM sound modeling was completed with the use of three-dimensional (3D) computerized sound modeling software. All models in this report were developed with SoundPlan Essentials 5.0 software using the ISO 9613-2 standard. Sound levels are predicted based on the locations, sound levels, and frequency spectra of the sound sources, and the geometry and reflective properties of the local terrain and barriers. The predicted sound levels only take into consideration the sound produced by the discrete sources at the music venue and motorized OHV track, using “worst case scenario” levels such as a rock band and a gasoline-powered dirt bike, and no other sources, such as traffic, other site operations, neighboring operations, other human activity, or environmental factors were included.

5.2 Sound Sensitive Receptors

The noise modelling sensitive receptor locations were chosen to be consistent with the requirements of CRS 25-12-103, specifically that sound levels radiating from the site perimeter (property boundary) at 25 feet or more, in excess of the dB(A) established for the established time and zone shall constitute evidence that the sound is a public nuisance. As such, receptor locations were chosen to give the largest sound level reading, representing potential regulatory measurement points, should a complaint be made.

5.3 Nutrient Farm Music Venue Sound Tests

Additional sound testing was conducted by Nutrient Farm through employing a variety of amplifiers, and actual sound levels were recorded with the use of a BAFX Products BAF3370 Digital Sound Level Meter (range: 30-130 dB(A)). These sound tests were performed in the Nutrient Farm West pasture, and North of the Vulcan ditch near the proposed music venue area. A sizable professional audio system was installed as close to the proposed music venue location as possible and the volume was played at the highest level possible. The following audio speaker system was set up facing southwest (towards the hogback):

- Eight (8) Funktion1 F121 21” Subs on 10,000-watt FFA amplifier
- Four (4) Funktion1 Evo6 10”/15” Pair Mids on 6,000-watt FFA amplifier
- Four (4) Funktion1 Evo6 1.4” Highs on 3,000-watt FFA amplifier

The audio engineer administering the system stated that a small music event could be operated with the test system at volume level 4.

5.4 Moto Park Sound Tests

The vehicles used in the test are actual vehicles planned for use in the park. Decibel readings were recorded by Nutrient Farm staff with the vehicles driving by at various speeds at various distances from receptors. The following vehicles were tested:

Vehicle Models

- 2018 Future Motion Onewheel XR+
- 2021 Zero FX

The sound level recordings were completed with the use of a BAFX Products BAF3370 Digital Sound Level Meter, range: 30-130 dB(A). Receptor location for these tests was at County Road 335 crossing the Nutrient Farm West pasture, just west of the developed Nutrient Farm Road.

Figure 5-1: Nutrient Farm PUD Site Plan

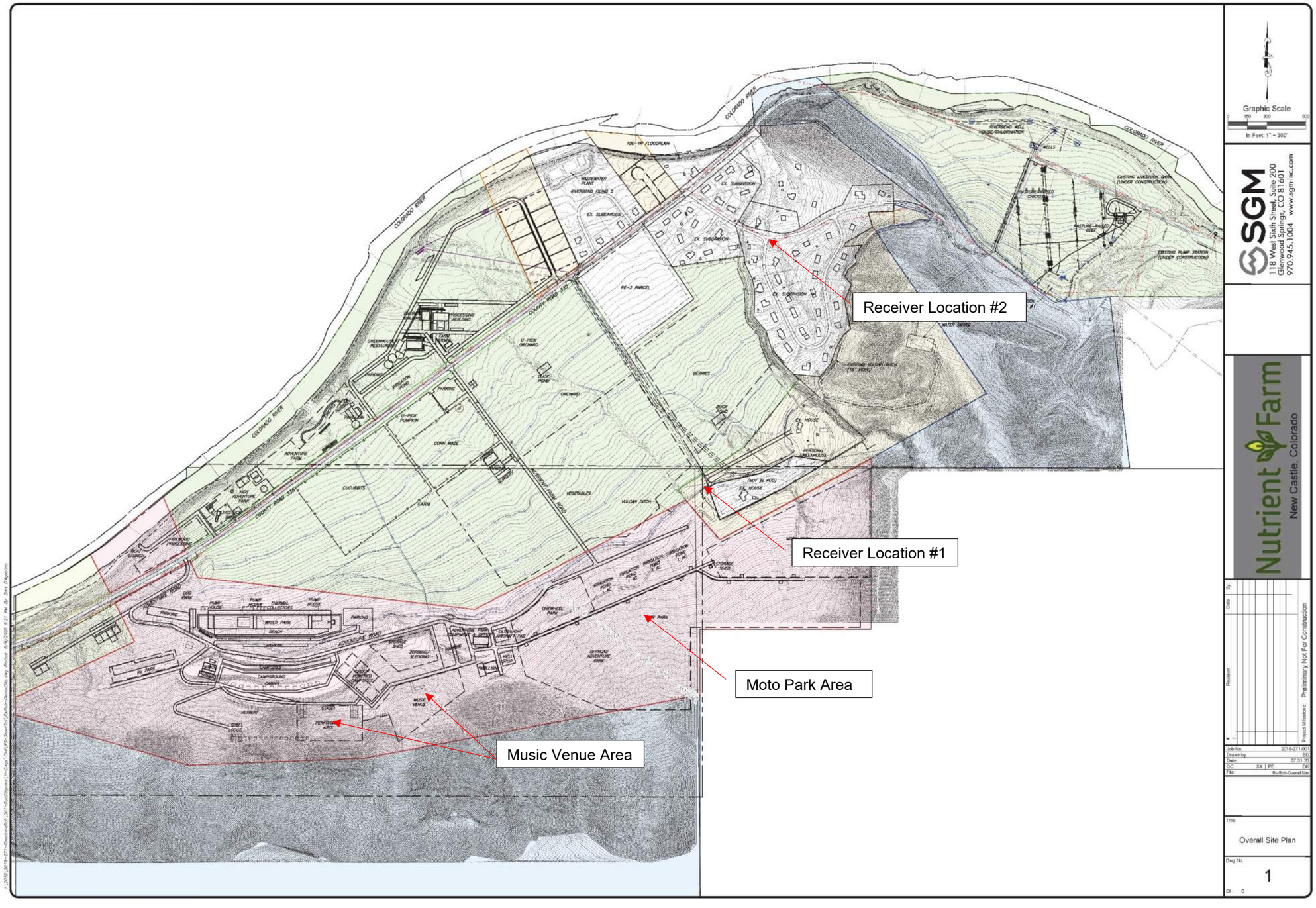


Figure 5-2: Sound Test Location: Music Venue

LEGEND
Orange = Receptor Locations
Yellow = Sound Test Locations
Red = Future Proposed Music Venue Locations

Figure 5-3: Sound Test Location: County Road 335

LEGEND
Orange = Receptor Locations
Yellow = Sound Test Location

5.5 Sound Modeling Results

For the music venue, various modeled sound volumes were measured across the project area. Two receiver locations were chosen due to the potential nuisance to existing residential areas. The description is found in **Table 5-1**, and the results of the Nutrient Farm music sound tests is found in **Table 5-2**. The results of the Nutrient Farm vehicle sound tests are listed in **Table 5-3** and **Table 5-4**.

Table 5-1: Modelling Scenarios Employed

Modeled Scenario	Description
Music Venue	Receptors placed at Location #1 (nearby existing residence owned by "**Chris Lake**)and the other receptor placed in the center of the Riverbend Community "**Riverbend**" Location #2. Receptors were also placed in the front and rear of the speakers.
Vehicles	Receptors were measured along County Road 335 as vehicles drove by at various speeds.

5.6 Sound Test Results

At volume level 4, the sounds first became humanly audible over ambient (background) sounds at both receptor locations. At volume level 8 the sound levels were still just humanly audible over ambient sounds at both receptor locations. At the highest system volume (level 10), the highest receptor reading was 59 dB (A) at Location 2, a couple decibels over ambient sound levels, and four (4) dB (A) over diurnal Residential sound standards, and nine (9) dB (A) over nighttime Residential sound standards

Table 5-2: Music Volume dBa Readings

Volume Level	Location 1 Chris Lake	Location 2 Riverbend	Front of Speakers	Rear of Speakers	Notes
0	**52**	**57**	**-**	**-**	**Ambient**
1	**53**	**57**	**72**	**74**	
2	**53**	**56**	**74**	**75**	
3	**51**	**58**	**77**	**73**	
4	**52**	**59**	**81**	**75**	**First audible over ambient**
5	**53**	**59**	**84**	**76**	
6	**54**	**59**	**85**	**74**	
7	**53**	**57**	**87**	**78**	
8	**54**	**59**	**92**	**82**	**Audible over ambient**
9	**57**	**59**	**96**	**86**	
10	**58**	**59**	**101**	**91**	

Table 5-3: Onewheel motorcycle dBa Readings

Speed	Location 1 20' Distance	Location 2 50' Distance	Notes
0	55	55	Ambient
15	62	58	

Table 5-4: Zero FX motorcycle dBa Readings

Speed	Location 1 50' Distance	Location 2 100' Distance	Location 3 200' Distance	Notes
0	63	58	58	Ambient
10	59	59	55	
20	69	63	54	
30	66	60	58	
40	67	64	60	
55	72	68	59	

6.0 Conclusion

Predictively modeled sound levels and actual sound tests were conducted to represent the proposed music venue and motorized OHVs at the Nutrient Farm PUD. Sound sensitive receptors locations included in the model runs were placed in accordance with the sound standards of CRS 25-12-103.

The numerical sound level results for the music venue can be improved with simple sound diffusion efforts. Only half of the speakers during the music test had a partial haystack berm behind them to simulate sound mitigations. The other half of the speakers had no haystack berm at all. In the future, to achieve better results, larger and more robust berms could be used, and the berms could be used on all speakers. Crowd noise was not measured during this test however, simple sound barriers such as orchards and other trees are planned to be planted as sound diffusers, and the proposed music venue locations would be 0.1 to 0.2-miles further away from the receptor locations than the location of the sound test speakers.

It is found that the vehicles proposed for use in the Nutrient Adventure Moto Park will not create a sound nuisance if developed at a responsible distance from residential areas. If the parks are developed with a minimum distance of 200-feet from any property lines, it is anticipated that no sound nuisance will be created. These great results can be improved further with sound mitigation efforts. Performing acoustical engineering techniques, such as using soil berms for sound isolation or planting dense trees to behave as sound diffusers, will be employed to reduced sound emissions further.

Appendix A – Glossary of Acoustical Terms

Ambient Noise - The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources both near and far.

Average Sound Level - See Equivalent-Continuous Sound Level

Community Noise Equivalent Level (CNEL) - A 24-hour A-weighted average sound level which considers the fact that a given level of noise may be more or less tolerable depending on when it occurs. The CNEL measure of noise exposure weights average hourly noise levels by 5 dB for the evening hours (between 7:00 pm and 10:00 pm), and 10 dB between 10:00 pm and 7:00 am, then combines the results with the daytime levels to produce the final CNEL value. It is measured in decibels, dbs.

Day-Night Average Sound Level (Ldn) - A measure of noise exposure level that is similar to CNEL except that there is no weighting applied to the evening hours of 7:00 pm to 10:00 pm. It is measured in decibels, dB.

Daytime Average Sound Level - The time-averaged A-weighted sound level measured between the hours of 7:00 am to 7:00 pm. It is measured in decibels, dB.

Decay Rate - The time taken for the sound pressure level at a given frequency to decrease in a room. It is measured in decibels per second, dB/s.

Decibel (dB) - The basic unit of measurement for sound level.

Direct Sound - Sound that reaches a given location in a direct line from the source without any reflections.

Divergence - The spreading of sound waves from a source in a free field, resulting in a reduction in sound pressure level with increasing distance from the source.

Energy Basis - This refers to the procedure of summing or averaging sound pressure levels based on their squared pressures. This method involves the conversion of decibels to pressures, then performing the necessary arithmetic calculations, and finally changing the pressure back to decibels.

Equivalent-Continuous Sound Level (Leq) - The average sound level measured over a specified time period. It is a single-number measure of time-varying noise over a specified time period. It is the level of a steady sound that, in a stated time period and at a stated location, has the same A-Weighted sound energy as the time-varying sound. For example, a person who experiences an Leq of 60 dB(A) for a period of 10 minutes standing next to a busy street is exposed to the same amount of sound energy as if he had experienced a constant noise level of 60 dB(A) for 10 minutes rather than the time-varying traffic noise level. It is measured in decibels, dB.

Fast Response - A setting on the sound level meter that determines how sound levels are averaged over time. A fast sound level is always more strongly influenced by recent sounds, and less influenced by sounds occurring in the distant past, than the corresponding slow sound level. For the same non-steady sound, the maximum fast sound level is generally greater than the corresponding maximum slow sound level. Fast response is typically used to measure impact sound levels.

Field Impact Insulation Class (FIIC) - A single number rating similar to the impact insulation class except that the impact sound pressure levels are measured in the field.

Field Sound Transmission Class (FSTC) - A single number rating similar to sound transmission class except that the transmission loss values used to derive this class are measured in the field.

Flanking Sound Transmission - The transmission of sound from a room in which a source is located to an adjacent receiving room by paths other than through the common partition. Also, the diffraction of noise around the ends of a barrier.

Frequency - The number of oscillations per second of a sound wave

Hourly Average Sound Level (HNL) - The equivalent-continuous sound level, Leq, over a 1-hour period.

Impact Insulation Class (IIC) - A single number rating used to compare the effectiveness of floor/ceiling assemblies in providing reduction of impact-generated sound such as the sound of a person's walking across the upstairs floor.

Impact Noise - The noise that results when two objects collide.

Impulse Noise - Noise of a transient nature due to the sudden impulse of pressure like that created by a gunshot or balloon bursting.

Insertion Loss - The decrease in sound power level measured at the location of the receiver when an element (e.g., a noise barrier) is inserted in the transmission path between the sound source and the receiver.

Inverse Square Law - A rule by which the sound intensity varies inversely with the square of the distance from the source. This results in a 6dB decrease in sound pressure level for each doubling of distance from the source.

Ln Percentile Sound Level - The noise level exceeded for n% of the measurement period where n is between 0.01% and 99.99%. Usually includes a descriptor i.e. A-weighting. Common Ln values include LA10, LA50, and LA90 levels. LA10 would represent the A-weighted sound level that is exceeded for 10% of the measurement period.

Masking - The process by which the threshold of hearing for one sound is raised by the presence of another sound.

Maximum Sound Level (Lmax) - The greatest sound level measured on a sound level meter during a designated time interval or event.

NC Curves (Noise Criterion Curves) - A system for rating the noisiness of an occupied indoor space. An actual octave-band spectrum is compared with a set of standard NC curves to determine the NC level of the space.

Noise Isolation Class (NIC) - A single number rating derived from the measured values of noise reduction between two enclosed spaces that are connected by one or more partitions. Unlike STC or NNIC, this rating is not adjusted or normalized to a measured or standard reverberation time.

Noise Reduction - The difference in sound pressure level between any two points.

Noise Reduction Coefficient (NRC) - A single number rating of the sound absorption properties of a material. It is the average of the sound absorption coefficients at 250, 500, 1000, and 2000 Hz, rounded to the nearest multiple of 0.05.

Normalized Noise Isolation Class (NNIC) - A single number rating similar to the noise isolation class except that the measured noise reduction values are normalized to a reverberation time of 0.5 seconds.

Octave - The frequency interval between two sounds whose frequency ratio is 2. For example, the frequency interval between 500 Hz and 1,000 Hz is one octave.

Octave-Band Sound Level - For an octave frequency band, the sound pressure level of the sound contained within that band.

Outdoor-Indoor Transmission Class (OITC) - A single number rating used to compare the sound insulation properties of building façade elements. This rating is designed to correlate with subjective impressions of the ability of façade elements to reduce the overall loudness of ground and air transportation noise.

Peak Sound Level (Lpk) - The maximum instantaneous sound level during a stated time period or event.

Point Source - A source that radiates sound as if from a single point.

RC Curves (Room Criterion Curves) - A system for rating the noisiness of an occupied indoor space. An actual octave-band spectrum is compared with a set of standard RC curves to determine the RC level of the space.

Real-Time Analyzer (RTA) - An instrument for the determination of a sound spectrum.

Receiver - A person (or persons) or equipment which is affected by noise.

Reflected Sound - Sound that persists in an enclosed space as a result of repeated reflections or scattering. It does not include sound that travels directly from the source without reflections.

Reverberation - The persistence of a sound in an enclosed or partially enclosed space after the source of the sound has stopped, due to the repeated reflection of the sound waves.

Room Absorption - The total absorption within a room due to all objects, surfaces and air absorption within the room. It is measured in Sabins or metric Sabins.

Slow Response - A setting on the sound level meter that determines how measured sound levels are averaged over time. A slow sound level is more influenced by sounds occurring in the distant past that the corresponding fast sound level.

Sound - A physical disturbance in a medium (e.g., air) that is capable of being detected by the human ear.

Sound Absorption Coefficient - A measure of the sound-absorptive property of a material.

Sound Insulation - The capacity of a structure or element to prevent sound from reaching a receiver room either by absorption or reflection.

Sound Level Meter (SLM) - An instrument used for the measurement of sound level, with a standard frequency-weighting and standard exponentially weighted time averaging.

Sound Power Level - A physical measure of the amount of power a sound source radiates into the surrounding air. It is measured in decibels.

Sound Pressure Level - A physical measure of the magnitude of a sound. It is related to the sound's energy. The terms sound pressure level and sound level are often used interchangeably.

Sound Transmission Class (STC) - A single number rating used to compare the sound insulation properties of walls, floors, ceilings, windows, or doors. This rating is designed to correlate with subjective impressions of the ability of building elements to reduce the overall loudness of speech, radio, television, and similar noise sources in offices and buildings.

Source Room - A room that contains a noise source or sources

Spectrum - The spectrum of a sound wave is a description of its resolution into components, each of different frequency and usually different amplitude.

Tapping Machine - A device used in rating different floor constructions against impacts. It produces a series of impacts on the floor under test, 10 times per second.

Tone - A sound with a distinct pitch

Transmission Loss (TL) - A property of a material or structure describing its ability to reduce the transmission of sound at a particular frequency from one space to another. The higher the TL value the more effective the material or structure is in reducing sound between two spaces. It is measured in decibels.

Weighted Decibel Scale - The human ear is more sensitive to some sound frequencies than others. It is therefore common practice to apply a filter to measured sound levels to approximate the frequency sensitivity of the human ear. One such filter is called the A-weighted decibel scale which emphasizes sounds between 1,000 and 5,000 Hertz by discounting the frequencies outside of this range. As the human ear is less sensitive to low frequency noise, the A-weighted decibel scale begins to increasingly discount noise below 500 Hertz.

Measurements conducted utilizing the A-weighted decibel scale are denoted with an “(A)” or “A” after the decibel abbreviation (dB(A) or dBA). The A-weighted scale is nearly universally used when assessing noise impact on humans.

High level low frequency noise can propagate large distances from its source. Although not always audible, high levels of low frequency noise can induce vibrations in objects or structures which could become evident in ways that might be annoying to humans (e.g., rattling of windows). The C-weighted decibel scale, which was developed to estimate human ear sensitivity to high noise levels, is a flatter filter that does not discount low frequency noise as much as the A-weighted decibel scale. As a result, a C-weighted decibel measurement could be significantly higher than an A-weighted decibel measurement if the noise being measured contains a heavy low frequency content.

Measurements conducted utilizing the C-weighted decibel scale are denoted with an “(C)” or “C” after the decibel abbreviation (dB(C) or dBC). C-weighted noise level limits are sometimes included in noise regulations as a way to address low frequency environmental noise issues.

White Noise - Noise that has approximately equal intensities at all frequencies.

Windscreen - A porous covering for a microphone, designed to reduce the noise generated by the passage of wind over the microphone.

NUTRIENT FARM PLANNED UNIT DEVELOPMENT (PUD)

DEVELOPMENT AGREEMENT

Between

The Board of County Commissioners of Garfield County, Colorado

and

Nutrient Holdings LLC

TABLE OF CONTENTS

LIST OF EXHIBITS

NUTRIENT FARM PLANNED UNIT DEVELOPMENT (PUD)

DEVELOPMENT AGREEMENT

THIS DEVELOPMENT AGREEMENT FOR THE NUTRIENT FARM PUD (the "Agreement") is made by and between the Board of County Commissioners of Garfield County, Colorado (the "County") and Nutrient Holdings LLC, a Colorado Limited Liability Company ("Developer") as of _____, 2022 (the "Effective Date").

RECITALS

A. Developer is the owner of certain real property located in the County of Garfield and State of Colorado more particularly described in Exhibit A attached hereto and made a part hereof (the "Property").

B. Developer and Garfield County desire to voluntarily enter into a development agreement to ensure the provision of mutual benefits according to specific terms and for an identified period.

C. The Property contains approximately 1,136 acres.

D. The County and Developer desire to protect the natural values, agricultural, recreation and open space values of the Property, provide for much needed industry, agriculture, and further ensure orderly development on the Property.

E. The Nutrient Farm PUD Guide ("PUD") and accordant rezoning was approved by Resolution No. 2022-___, duly adopted by the County at a public hearing conducted on _____, 2022 (the "Resolution").

F. By its terms, the PUD will not be executed or effective until recorded.

G. The recordation of the PUD and preparation for the development of the Property involves several items of mutual interest to the parties, including: a) LoVa trail pathway easement dedications; b) County right-of-way easement dedications; and c) the installation of infrastructure in a coordinated manner in order to accomplish the goals identified in this Agreement and as set forth in the PUD.

H. The Developer desires to develop the PUD in phases, commencing with the development of infrastructure and agricultural facilities and establishment of agricultural operations, and to also implement the key aspects of the PUD and the related development, in coordinated phases as well.

I. The County has determined that the recordation of the PUD and the development of the Property in accordance with the constraints and commitments set forth therein bestow significant benefits upon the Developer as well as the residents of the County, particularly including the dedication of recreational easements, establishment of recreation opportunities upon and near the Property, the timely phased pattern of development, Colorado River Road (County Road 335) right-of-way dedication, the construction and dedication of five LoVa Trail public parking spaces, extinguishment of density, and, most significantly, the prompt commencement and development of the experiential agricultural operations on the Property, and other benefits described in the Developer's PUD, as approved with findings and conditions.

J. The County has determined that the terms and conditions of this Agreement and the other transactions contemplated herein benefit the Developer and the County, will serve a

public benefit and will promote the health, safety and welfare of the residents of the County, and will ensure the orderly development of the Property.

K. The Garfield County Board of County Commissioners ("BOCC") has reviewed this Agreement at a public hearing held on _____, 2022.

L. The BOCC has determined that the PUD furthers pivotal goals and policies of the Garfield County Comprehensive Plan 2030, and the Garfield County Land Use and Development Code, and therefore approval of a development agreement to ensure the commitments as set forth in said PUD is appropriate.

AGREEMENT

NOW, THEREFORE, in consideration of the recitals set forth above and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the County and Developer hereby agree as follows:

1. DEFINITIONS

1.1 The following terms, as used in the Agreement, shall have the meanings set forth below:

"Agreement" shall have the meaning set forth in the preamble.

"Code" shall mean the Garfield County Land Use and Development Code.

"County" shall have the meaning set forth in the preamble.

"Developer" shall have the meaning set forth in the preamble.

"Development Exactions" shall have the meaning set forth herein.

"Effective Date" shall have the meaning set forth in the preamble.

"Future Land Use Approvals" shall have the meaning set forth herein.

"Land Use Regulations" shall have the meaning set forth herein.

"Property" shall have the meaning set forth in Recital A hereof.

"PUD" shall have the meaning set forth in Recital E hereof.

"Request for Particulars" shall have the meaning set forth herein.

"Term" shall have the meaning set forth herein.

2. DEVELOPMENT PLAN FOR PROPERTY

2.1 Garfield County acknowledges and agrees that it has determined that circumstances warrant the Agreement because: (1) the public is benefited by a deliberate, staged development of the Property with minimal adverse impact on the environment in the interim; (2) this Agreement allows the ability to phase the development in accordance with market demand and fiscal viability; (3) this Agreement provides for the development of agricultural operations; (4) the construction and financing of improvements and facilities needed to support both have been addressed by requiring that this Agreement specifically address and commit to all such improvements; and (5) the findings required for a final rezoning and PUD approval have been met and satisfied.

2.2 The Parties Agree as Follows:

2.2.1 Development Plan. The Developer shall develop the Property and engage in uses in the manner identified in the PUD and related supporting documents, as approved by the Resolution, specifically

including the Conceptual Development Plan/PUD Plan Map incorporated into said PUD; provided the applicable provisions of said PUD and the Code are met, including but not limited to the need for site plan review for several distinct aspects of the development; platting for future single family development; and the need for grading permits in accordance with the provisions of the Code.

2.2.2 Timing of Development. In recognition of the nature of the development to occur on the Property pursuant to the terms of this Agreement, the benefit of a phased and specifically identified development period to protect the unique character and nature of the Property as an ideal site for the PUD and further to protect against the possible impact of economic conditions and economic cycles and varying market conditions during the course of development, the Developer shall develop the Property in such order and at such rate and at such time as the market dictates is contemplated within the structure of this Agreement, as set forth with specificity in section 2.2.11 below.

2.2.3 Application of Subsequently Enacted Regulations. Developer acknowledges that the PUD constitutes only a zoning designation for the Property, and that the actual construction of improvements upon the Property shall be subject to additional land use approvals by the County, potentially including site plan approvals, building permits and grading permits (collectively, "Future Land Use Approvals"). Consistent with the scope and intent of this Agreement, applications by Developer for certain Future Land Use Approvals filed during the term shall be evaluated in accordance with and governed by the Land Use Regulations in effect at the time of the application.

2.2.4 No Exaction; Fees. Other than as may be required by: (i) the conditions of the PUD or Resolution, which the Developer hereby concurs with and assents to and acknowledges the legality and propriety thereof; (ii) conditions of this Agreement or the Resolution approving this Agreement; (iii) any other lawfully binding obligation pertaining to this development either preexisting this Agreement or assumed subsequent to this Agreement but with express acknowledgement of this Agreement; or (iv) uniformly applied fee schedules for land use applications and processing; Developer is not and shall not be subject to any improper exactions, in-lieu fees or payments, impact or excise fees, dedication or reservation requirements, obligations for onsite or off-site improvements, or construction requirements for public improvements, facilities or services (collectively, the "Development ") called for in connection with the use or development of the Property in accordance with the PUD.

2.2.5 Laws of General Applicability. Except as otherwise provided for, nothing in this Agreement shall exempt Developer from the application of laws of general applicability within the County relating to building and construction standards, including building, fire, plumbing, electrical, mechanical, grading and sign codes ("Building Codes") or laws of general application relating to taxes subsequently enacted or increased. Developer does not waive its right to oppose adoption of any such laws.

2.2.6 Hazardous Conditions. Nothing in this Agreement shall affect the right of the County to impose regulations or requirements reasonably calculated to remediate natural or man-made hazards on or in the immediate vicinity of the Property.

2.2.7 Non-Restrictive Nature of Agreement. Nothing in this Agreement shall be construed to prohibit Developer from: (i) using or developing the Property in any manner that is less restrictive than the provisions of this Agreement under the laws in effect at any time, so long as such use or development is not inconsistent with the PUD or (ii) applying for any modification or amendment to, or variance, waiver or exemption from, the provisions of the PUD, this Agreement or from any laws in effect at any time.

2.2.8 Compliance with the PUD. All development of the Property shall comply with standards and requirements of the PUD and is drafted in a manner as to ensure said compatibility. Accordingly, to the fullest extent practicable, the PUD and this Agreement are to be read in pari materia and complementary to each other.

2.2.9 Status of Applicable Land Use Plans. Developer acknowledges and agrees that the County may amend the County Comprehensive Plan, and that the current land use designations for the Property may be changed to reflect the land uses and density contemplated by this Agreement and the PUD.

2.2.10 Developer Obligations. Developer expressly acknowledges and voluntarily commits to the securing of certain commitments of public benefits in light of the allowances provided by the County in the PUD and herein. Said Developer obligations shall expressly contain the following commitments:

(A) PUD Modification. Concurrently with approval of the PUD, Developer commits to apply for and obtain approval of a PUD Modification eliminating the application of both the Coal Ridge and Riverbend PUDs and effect on the Property;

(B) Final Plat for Creation of Market Rate Lots. In regard to the agricultural operations, infrastructure may be implemented into such operations in advance, but the adoption of this PUD shall in no manner, express or implied, create any saleable lot, entitlement or development right for any such lots. No lot, nor an entitlement related to any such lot, shall be established unless and until a final plat creating any such particular lot is first approved by the County in accordance with the Code, and duly recorded accordingly, subsequent to such County approval; and

(C) Commitment to Public Benefits. Developer has agreed to perform the following actions after the approval of the PUD Designation and the County's signature on the same:

(i.) Upon consultation with the County, a xx foot wide easement for the LoVa Trail through property as generally shown on the Conceptual Development Plan/PUD Plan map shall be dedicated.

(ii.) Colorado River Road (County Road 335) Dedication and Related Improvements. Upon consultation and accord with the County Engineer, Developer shall make certain easement dedications for the Colorado River Road on the area of such road that orients from the existing end of such road within the boundaries of the Property. Such easement dedication shall include improvements that expressly encompass the location, development, and dedication of a parking area with up to five (5) parking spaces adjacent to Colorado River Road.

These actions shall be completed within 240 days of the execution of this Development Agreement and associated PUD, or as otherwise specifically provided for herein, as a specific requirement of said Agreement.

2.2.11 Timing of Development. In recognition of the nature of the development to occur on the Property pursuant to the terms of this Agreement, the benefit of a phased and contemplative development period, and to ensure the mutual benefits to the public and the Developer as reflected in the PUD and accordant Conceptual Development Plan/PUD Plan Map are realized in a balanced and even fashion, the parties expressly agree to generally adhere to the development and phasing schedule to ensure the orderly development of all said aspects of the Development.

(A) Construction of the general infrastructure for the Property for the entire Development may commence upon approval of the PUD, recordation of said PUD, execution of any applicable Site Improvements Agreement for said Property, and issuance of any applicable grading and excavation permit for such Property and accordant infrastructure improvements.

(B) Building and/or grading permits shall be applied for all structures in the development in accordance with the Building Codes.

(C) Developer may improve or replace the existing Farm House owner home on Development Area 2 upon grant of a building permit for the same, without any requirement for site plan or subdivision prior to commencement of construction.

2.2.12 Material Terms. The General Development schedule, Phasing Plan, set forth herein as Exhibit C, has been reviewed and approved by both the County and the Developer, and their respective legal counsel, and both parties expressly agree and acknowledge that said development schedule shall be a fundamental and material element of this Development Agreement and the rights and responsibilities set forth herein, and accordingly, any non-performance of the same shall be deemed a material breach of this Agreement, and subject to immediate demands for cure and enforcement action.

2.2.13 Quasi-Judicial Review Exception. Notwithstanding anything to the foregoing herein, express or implied, Developer expressly acknowledges that any provisions regarding County approvals such as site plan or final plat review, are quasi-judicial in nature, and the County does not imply or assure any approval of any such land use application unless such application is first approved independently, on its merits, and in accordance with the applicable provisions or the Code or any other applicable laws.

3. APPLICABLE LAWS/RESERVED POWERS

3.1 Application of Laws of General Nature. Except as provided in Section 24-68-105, C.R.S. and except as specifically provided for herein, the execution of this Agreement shall not preclude the current or future application of County laws, rules or regulations which are general in nature and applicable to all property subject to land use or other regulation by Garfield County, including, but not by way of limitation, building, fire and engineering codes, to Developer's construction of the improvements within the Property, as such laws may be in effect from time to time throughout the term of this Agreement. Except to the extent Garfield County otherwise specifically agrees, any construction of improvements within the Property shall be done in compliance with the then-current building, fire and engineering requirements of Garfield County.

3.2 Amendment of Code; Zoning Documents and Actions. Nothing in this Agreement shall preclude or otherwise limit the lawful authority of Garfield County to adopt or amend any Garfield County law, including, but not limited to Garfield County's: (i) Code; (ii) the Countywide Comprehensive Plan; provided, however, that no such adoption, amendment, zoning or land use action by Garfield County, or pursuant to initiative, shall alter, impair, prevent, diminish, impose a moratorium upon or otherwise intentionally delay the development or use of the Property as provided for in the PUD.

4. BINDING NATURE OF AGREEMENT; REMEDIES

4.1 Assent, Acknowledgment. The parties acknowledge and agree to the legality and propriety of the PUD and Resolution of approval No. 2022 - ____, and that they all are lawfully binding obligations pertaining to the PUD, freely and voluntarily entered into without duress in full accordance with all

provisions of law. The parties acknowledge and agree the PUD and all conditions do not constitute any improper exactions, in-lieu fees or payments, impact or excise fees, dedication or reservation requirements, obligations for onsite or off-site improvements, or construction requirements for public improvements, facilities or services called for in connection with the use or development of the Property in accordance with the PUD.

4.2 Request for Particulars. At any time after Developer submits an application for a Future Land Use Approval or building permit required for any development, building, structure, improvement, use or other land use right pursuant to this Agreement, and Developer in good faith becomes uncertain as to the requirements of the County to issue such permit or approval, Developer shall have the right to request a Code interpretation from the County as to the same, in accordance with the applicable Code provisions for such a process, which interpretation shall be made in consideration of the parameters of this Agreement and the related PUD.

4.3 County Not a Partner; Developer Not County's Agent. Notwithstanding any language in this Agreement or any other agreement, representation or warranty to the contrary, the County shall not be deemed or constituted a partner or joint venturer of the Developer, and the Developer shall not be the agent of the County, such that the County shall not be responsible for any debt or liability of the Developer, and the Developer shall not be responsible for any debt or liability of the County.

5. ENFORCEMENT/DAMAGES

The provisions of this Agreement shall be enforceable by the parties at law or in equity and the parties may pursue damages or specific performance or both in the event of any breach of this Agreement, except as otherwise provided for herein. If at any time any provision or requirement stated in this Agreement has been breached by Developer, Garfield County may withhold approval of any or all site plans or plat maps, or the issuance of any or all grading or building permits or occupancy permits applied for on the Property, until such breach has been remedied; provided, however, that the County shall not take affirmative action on account of such breach until it shall have first notified the Developer as provided herein, and allowed an opportunity for cure. If Developer fails to remedy a material breach of this Agreement after six (6) months advance written notice, the property rights vested by this Agreement shall be forfeited.

6. NOTICE OF DEFAULT; CURE

Prior to any action against Garfield County for breach of this Agreement, Developer shall give Garfield County a thirty (30) day written notice of any claim by the Developer of a breach or default by Garfield County, and Garfield County shall have the opportunity to cure such alleged default within such time period. Prior to any action against Developer for breach of this Agreement, Garfield County shall give Developer a thirty (30) day written notice of any claim by Garfield County of a breach or default by Developer, and Developer shall have an opportunity to cure such alleged default within such time period.

7. NO REMEDY

Garfield County shall not be responsible for, and the Developer shall have no remedy against Garfield County if development pursuant to the PUD is prevented or delayed for reasons beyond the control of Garfield County. In no event shall the County be liable for money damages in the

event of a breach or default by the County. Notwithstanding the foregoing, Developer expressly reserves its rights to pursue "just compensation" for a taking of property as allowed by applicable protections under the Constitution of the United States of America or the State of Colorado, or pursuant to Section 24-68-105(1)(c), if appropriate. County does hereby acknowledge said reservation of rights by Developer. Nevertheless, both parties agree that neither the terms of this Agreement nor the terms of the PUD constitute a taking in any manner, and Developer has sought such terms volitionally and the County has approved the same, upon request, in the exercise of its quasi-judicial discretion.

8. INDEMNIFICATION

The Developer agrees to indemnify and hold Garfield County, its officers, employees, insurers, and self-insurance pool, harmless from and against all liability, claims, and demands, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, death, property loss or damage, or any other loss of any kind whatsoever, which arise out of or are in any manner connected with this Agreement, if such injury, loss, or damage is caused in whole or in part by, or is claimed to be caused in whole or in part by, the negligence or intentional act or omission of Developer or its employees, contractors, representatives or agents; except to the extent such liability, claim or demand arises through the negligence or intentional act or omission of Garfield County, its officers, employees, or agents. Developer agrees to investigate, handle, respond to, and to provide defense for and defend against, any such liability, claims, or demands at the sole expense of the Developer. Developer also agrees to bear all other costs and expenses related thereto, including court costs and attorney's fees.

9. PERIODIC REVIEW

The County may conduct periodic reviews of this Agreement and the requirements of the PUD to ensure compliance with the requirements of this Agreement and the PUD.

10. MISCELLANEOUS

10.1 Not a Public Dedication. Except as may be provided in other instruments referred to herein in which Developer expressly conveys or grants to the County any rights or interests in the Property, nothing in this Agreement shall be deemed to be a gift or dedication of the Property, or any portion thereof or any right or interest therein, for the general public, or for any public use or purpose whatsoever, it being the intention and understanding of the County and Developer that this Agreement be strictly limited for the purposes herein expressed for the use and development of the Property as private land.

10.2 Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Colorado, and with all applicable provisions of the Garfield County Land Use and Development Code.

10.3 Interpretation. In this Agreement, unless the context clearly requires a contrary construction, (a) "including" shall be construed in its most inclusive sense (i.e., as "including, without limitation"); (b) the singular shall include the plural and the plural the singular; (c) the masculine, feminine or neuter shall each include the other genders; (d) the word "construction" and its variants shall include reconstruction, installation, reinstallation, demolition, replacement and relocation; (e) the word "use" shall include enjoyment, occupancy and possession; (f) the word "maintenance" and its variants shall include

keep in existence, as well as restoration, repair and replacement; (g) the word "laws" shall mean all laws, statutes, ordinances, resolutions, orders, codes, rules, regulations, judgments, decrees and other legal requirements of any or, if specified in this Agreement, the specified governmental authority having jurisdiction; (h) unless otherwise specified in this Agreement, reference to laws, the Development Code or the C.R.S. shall be construed to mean the laws, the Garfield County Land Use and Development Code and the Colorado Revised Statutes, respectively, as amended from time to time; and (i) the word "person" shall mean any individual, corporation, partnership (general or limited, with or without limited liability), limited liability company, estate, trust, business trust, association, governmental authority or any other legal entity; each such word being used in this Agreement in its broadest sense. References to "Articles" and "Sections" shall be to the Articles and Sections of this Agreement unless otherwise indicated. All of the exhibits to this Agreement are hereby incorporated in this Agreement by reference. References to "days" shall mean calendar days. The provisions of this Agreement shall be construed as to their fair meaning, and not for or against any party based upon any attributions to such party as the source of any particular language in this Agreement.

10.4 Captions. The captions in this Agreement are for convenience of reference only and are of no meaning in the interpretation of this Agreement or any provision hereof.

10.5 Severability. This Agreement and the covenants contained herein are intended to be severable in nature. If any provision of this Agreement shall be invalid, illegal, void or unenforceable, it shall not affect or impair the validity, legality or enforceability of this Agreement or any other provision hereof, to the maximum extent legally possible, reflecting the original intent of the County and Developer as expressed in this Agreement, given the context of the Agreement in its entirety. If any provision of this Agreement is invalid, illegal, void or unenforceable not in its entirety but as applied to a particular act, thing or circumstance, such provision shall not affect or impair the validity, legality or enforceability of this Agreement or any provision hereof as applied to any other act, thing or circumstance, and a court shall nearly as possible to the original intent of the County and Developer as expressed in this Agreement.

10.6 Burden and Benefits. Each and every one of the benefits, burdens, terms, covenants, agreements and conditions of this Agreement shall be construed as covenants running with the land benefiting and burdening the Property.

10.7 Effective Date of Agreement. This Agreement shall be recorded in the office of the Clerk and Recorder of Garfield County, Colorado. For all purposes, the effective date of this Agreement shall be the date upon which the Agreement and PUD, duly signed by the Board of County Commissioners and Nutrient Holdings LLC or its authorized designee, is properly recorded with the Garfield County Clerk and Recorder, in accordance with the Code.

10.8 Waiver. No waiver of any provision of this Agreement shall be deemed to constitute a waiver of any other provision, nor shall it be deemed to constitute a continuing waiver unless expressly provided for by a written amendment to this Agreement signed by both Garfield County and Developer; nor shall the waiver of any default under this Agreement be deemed a waiver of any subsequent default or defaults of the same type. Garfield County's failure to exercise any right under this Agreement shall not constitute the approval of any wrongful act by the Developer or the acceptance of any improvements.

10.9 Amendment. No amendment of the terms of this Agreement shall be valid unless in writing and executed and adopted pursuant to those procedures set forth in the Code and in accordance with all applicable law.

10.10 Sovereign Immunity. Nothing contained in this Agreement shall constitute a waiver of Garfield County's sovereign immunity under the Colorado Governmental Immunity Act or any other applicable state or federal law.

10.11 Successors and Assigns; Binding Effect. Where used herein, the term "Developer" shall also mean any of the heirs, executors, trustees, transferees, successors and assigns of Developer, and all such parties shall have the right to enforce the terms of this Agreement as if they were the original parties hereto. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

10.12 Dispute Resolution; Venue; Attorneys' Fees. Personal jurisdiction and venue for any civil action commenced by either party to this Agreement shall be deemed to be proper only if such action is commenced in District Court of Garfield County, Colorado. The prevailing party in any such action shall recover its reasonable attorneys' fees and costs.

10.13 Covenant of Cooperation. The parties covenant and agree to cooperate in good faith with one another in the performance of their respective rights and obligations hereunder in order that each may reasonably realize their respective benefits hereunder. The parties further covenant and agree to cooperate in good faith with one another in the event of any legal challenge to this Agreement.

10.14 Notice. Any notice required or permitted hereunder shall be in writing and shall be sufficient if personally delivered or mailed by certified mail, return receipt requested, addressed as follows:

To Garfield County:	Garfield County Board of County Commissioners 108 8th Street, Ste. 101 Glenwood Springs, CO 81601
With a copy to:	Garfield County Attorney 108 8th Street, Ste. 101 Glenwood Springs, CO 81601
To the Developer:	Nutrient Holdings LLC c/o Andy Bruno P.O. Box 560 New Castle, CO 81647
With a copy to:	Daniel Teodoru, Esq. Timberline Law Partners LLC P.O. Box 625 Breckenridge, CO 80424 Telephone: 970-455-4656

Notices mailed in accordance with the provisions of this paragraph shall be deemed to have been given three (3) days after deposit in the United States mail. Notices personally delivered shall be deemed to have been given upon delivery. Nothing herein shall prohibit the giving of notice in the manner provided for in the Colorado Rules of Civil Procedure for service of civil process. Either party may change the name or address for giving notice by providing notice of such change in the manner provided for herein.

11. ENTIRE AGREEMENT

This Agreement constitutes the entire agreement and understanding between the parties relating to the subject matter of this Agreement and supersedes any prior agreement or understanding relating to such subject matter.

12. THIRD PARTIES

This Agreement is not intended and shall not be deemed to confer upon any third party (excepting successors and assigns of Developer after the Effective Date) any benefits or any right to claim damages or to bring suit or other proceeding against either party because of any term contained in this Agreement.

IN WITNESS WHEREOF, Developer and the County have executed this Agreement as of the effective date of this Agreement as stated above.

NUTRIENT HOLDINGS LLC

By: _____
Name: _____
Title: _____

GARFIELD COUNTY BOARD OF COUNTY COMMISSIONERS

By:_____
Name:_____
Title: _____

ATTEST:

_____
Title: _____

APPROVED AS TO FORM:

_____
County Attorney

State of _____)
) ss
County of _____ **)**

The foregoing instrument was acknowledged before me this ____ day of _____, 2022, by Andy Bruno as Manager of Nutrient Holdings LLC, a Colorado corporate entity.

Witness my hand and official seal,
My Commission Expires: _____

_____
Notary Public

State of _____)
) ss
County of _____)

The foregoing instrument was acknowledged before me this ____ day of _____, 2022, by _____ as _____ of the Board of County Commissioners of Garfield County, Colorado.

Witness my hand and official seal,
My Commission Expires: _____

_____
Notary Public

Exhibit A
(Attached to and forming a part of the Development Agreement, dated _____, 20____, between the County of Garfield and Nutrient Holdings LLC)

PROPERTY DESCRIPTION

Exhibit B
(Attached to and forming a part of the
Development Agreement,
dated _____, 20___, between the
County of Garfield and Nutrient Holdings LLC)

NUTRIENT FARM PLANNED UNIT DEVELOPMENT GUIDE AND CONCEPTUAL DEVELOPMENT PLAN/PUD PLAN MAP

Exhibit C
(Attached to and forming a part of the Development Agreement, dated _____, 20___, between the County of Garfield and Nutrient Holdings LLC)

NUTRIENT FARM PHASING PLAN

Nutrient Farm Phasing Plan

Table 10 – Nutrient Farm Phasing Plan										
Area	**Name/Use**	**Phase 1**			**Phase 2**			**Phase 3**		
		2023	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2020**	**2031**
1	Residential Subdivision (5 Lots)				X	X	X	X	X	X
2	Residential Subdivision (1 Lot)		X	X						
3	Residential Subdivision (10 Lots)/Solar Energy Systems		X	X	X	X	X	X	X	X
4	Residential Subdivision (2 Lots)				X	X	X	X	X	X
5	Working Farm – East/Solar Energy Systems (1 Residential Lot)	X	X	X	X	X	X			
6	Working Farm – West/Solar Energy Systems	X	X	X	X	X	X	X	X	X
7	Commercial/Industrial Park				X	X	X	X	X	X
8	Outdoor Adventure Parks		X	X	X	X	X	X	X	X

Phase 1: East and West Working Farms and Development Area 3 Agricultural and Animal Related Uses, agricultural accessory/retail, and Agricultural Products, Processing, Storage, Distribution and Sale at Point of Production, Agricultural Products, Processing, Storage, Distribution and Sale Off-site improvements and Solar Energy Systems; Development of Area 2 residence; and commencement of the Outdoor Adventure Park improvements. The construction of the Farms irrigation systems, associated accesses, parking, utilities, and infrastructure improvements will be constructed in association with the buildings/structures in these Areas.

Phase 2: Continuation of East and West Working Farm and Development Area 3 Agricultural and Animal Related Uses, agricultural accessory/retail, Agricultural Products, Processing, Storage, Distribution and Sale at Point of Production, Agricultural Products, Processing, Storage, Distribution and Sale Off-site improvements, and Solar Energy Systems; continuation of the Outdoor Adventure Parks improvements; beginning of Commercial/Industrial Park improvements; and commencement of construction of five residential lots in Area 1, two residential lots in Area 4, and one residential lot Area 5 subdivisions. Notwithstanding the forgoing, one of the residential lots in Area 4 or 5 may be developed with a residence in Phase 1 to house the Nutrient Farm ranch manager and/or employees, if needed.

Phase 3: Continuation of Commercial/Industrial Park and Outdoor Adventure Park improvements, and Solar Energy Systems in Development Areas 6 and 3; continuation of Area 1 five residential lots; development of up to ten residential lots in Development Area 3; and continuation of the development of Area 4 two residential lots.

Implementation of the private Weed Management Plan shall commence upon recordation of the PUD Guide. As each phase is begun and each building or improvement is constructed, associated access, parking, utility

and infrastructure improvements will be installed concomitantly with such associated development. Reclamation, revegetation, and landscaping will be implemented per the terms of the PUD Guide in order to maintain the community character for Nutrient Farm.

Private trails may be constructed at any phase in the discretion of the Owner/Developer. All private trails in Nutrient Farm shall be constructed and maintained entirely by the Owner/Developer unless an alternative approach is finalized with any local governmental entities, quasi-governmental entities or non-profit entities. Private trails will only be open to public use per the direction and restraints dictated by Owner/Developer.

The LoVa Trail will be publicly dedicated, and constructed and maintained by local governmental entities, quasi-governmental entities or non-profit entities, not by the Owner/Developer.

The installation and maintenance of irrigation and infrastructure systems, and the implementation of the Weed Management Plan are on-going operational improvements across the entirety of Nutrient Farm, and may be implemented to any degree at any phase herein.

LEVEL III TRAFFIC IMPACT STUDY

NUTRIENT FARM

Prepared by

SGM

DAN COKLEY, PE, PTOE
LICENSE NO. 29799
8/24/21

COLORADO LICENSED
DANIEL J. COKLEY
29799
08.24.21
PROFESSIONAL ENGINEER

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1.0 Executive Summary

SGM completed this Level III Traffic Impact Study to describe the traffic impacts and proposed mitigation for the proposed development of the Nutrient Farm owned by Nutrient Holdings, LLC near New Castle in Garfield County, Colorado. This study was prepared in accordance with section 2.3(5) of the State Highway Access Code and consistent with the detailed Traffic Analysis requirements of Section 4-203 L of the Garfield County Land Use and Development Code (LUDC) and performs analysis to provide design parameters for a safe access with satisfactory operation for the development and continued acceptable operation of existing County Road (CR) 335 and adjacent intersections.

Traffic volumes on CR 335 east of Park Drive are estimated for the following scenarios:

- Baseline 2022 – CR 335 Average Daily Traffic of 400-500 vehicles per day
- 2042 Background - CR 335 Average Daily Traffic of 700-800 vehicles per day
- 2042 Total (less Music) - CR 335 Average Daily Traffic of 2300 vehicle per day

The study concludes that the development can be implemented, and the roadway system will continue to operate at an acceptable Level of Service when considering the growth in background traffic over a 20-year planning horizon plus the proposed project traffic volumes. The existing all-way Stop controlled intersection will provide a safe and acceptably operating CR 335 and Bruce Road intersection with consideration to the trips generated by the development. It is recommended that although the CR 335 and Bruce Road intersection and CR 335 accesses ability to operate adequately including the projected Music Festival traffic volumes, those events shall have either Uniform Traffic Control or Certified Traffic Control supervision at the CR 335 and Bruce Road and CR 335 and event access intersections to provide safe operations during the peak entry and exiting periods of the event.

The increase in traffic at the intersection is approximately 31% and will require the project to obtain a CDOT Access Permit.

The Road Impact Fee Calculation results in an estimated fee of $217,703, the calculation is approximate and will be based upon actual development and paid at time of development.

The CR 335 estimated 2042 Total traffic volume exceeds the Minor Collector standard based on the proposed development activities. If the actual development activity exceeds that threshold, the Road Impact Fees will be used to widen and pave a 2 ft shoulder on each side of CR 335 from Park Drive to Bruce Road to maintain the County Roadway Standards.

2.0 Introduction

This study is prepared as a Colorado Department of Transportation (CDOT) Level III Traffic Impact Study and Garfield County detailed Traffic Analysis that provides an estimate for design hour traffic generation for the Nutrient Farm development in Garfield County, Colorado. The purpose of this traffic impact study is to document the existing traffic conditions in the vicinity of the site, provide the trip generation and trip distribution of the proposed development, project traffic volumes to the 20-year planning horizon (2042), and to analyze the proposed CR 335 accesses and CR 335 and Bruce Road intersection for safety and operational impacts. Access to the site will be provided from multiple new access locations to CR 335.

This study will assess the operational measures of effectiveness (MOE's) including Level of Service (LOS), Delay, and 95th percentile queue as well as discuss auxiliary lane warrants on CR 335 at the proposed accesses. The study includes discussion of improvements that may be needed to provide for a safe and acceptably operating project intersections.

The project area is shown in Figure 1.

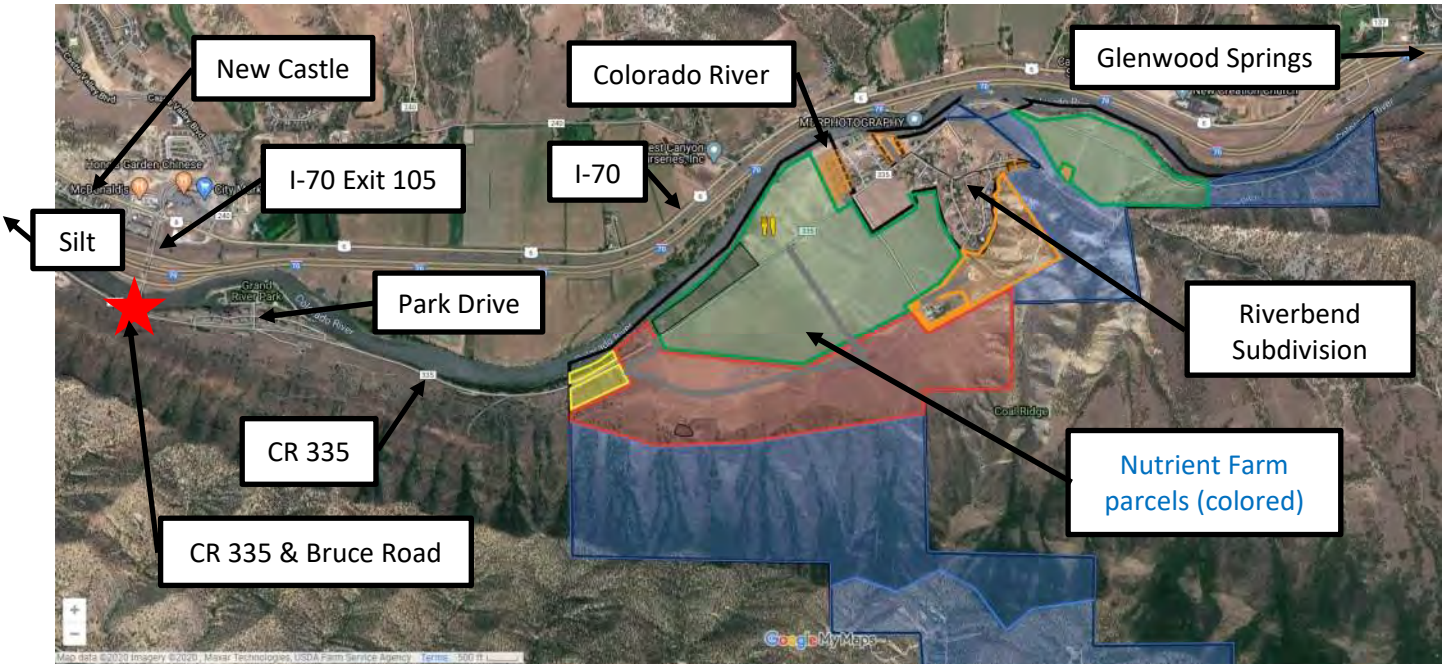

Figure 1 – Vicinity Map

2.1 Project Description

The proposed Nutrient Farm development is shown in a Conceptual Development Plan provided in Figure 2, and in Appendix A.

Based on the Conceptual Development Plan provided by the Client (May 2021), the proposed development of the Nutrient Farm will consist of a land use mix comprised of the following summarized in Table 1.

TABLE 1 – PROPOSED DEVELOPMENT LAND USE

Use	Amount	Units
Single Family Residential	19	Units
Accessory Dwelling Unit	20	Units
Warehouse / Processing Building	140,000	sf
General Office	15,000	sf
Retail Space	2000	sf
Farm Sales (Store and Orchard)	4000	sf
Restaurant	7500	sf
Campground / RV / Cabins	67	spaces
Adventure / Off-Road / Water Park	193	visitors
Performing Arts	100	visitors
Retreat	12	rooms
Music Festival	350	visitors

2.2 Location

As shown in Figure 1, the development parcel straddles CR 335 (located south of the Colorado River and east of the New Castle I-70 interchange (Exit 105). Access to the area is provided by CR 335 via Bruce Road (I-70 interchange north-south connection to Highway 6). There are planned to be multiple development access locations from CR 335 as shown in red in Figure 2.

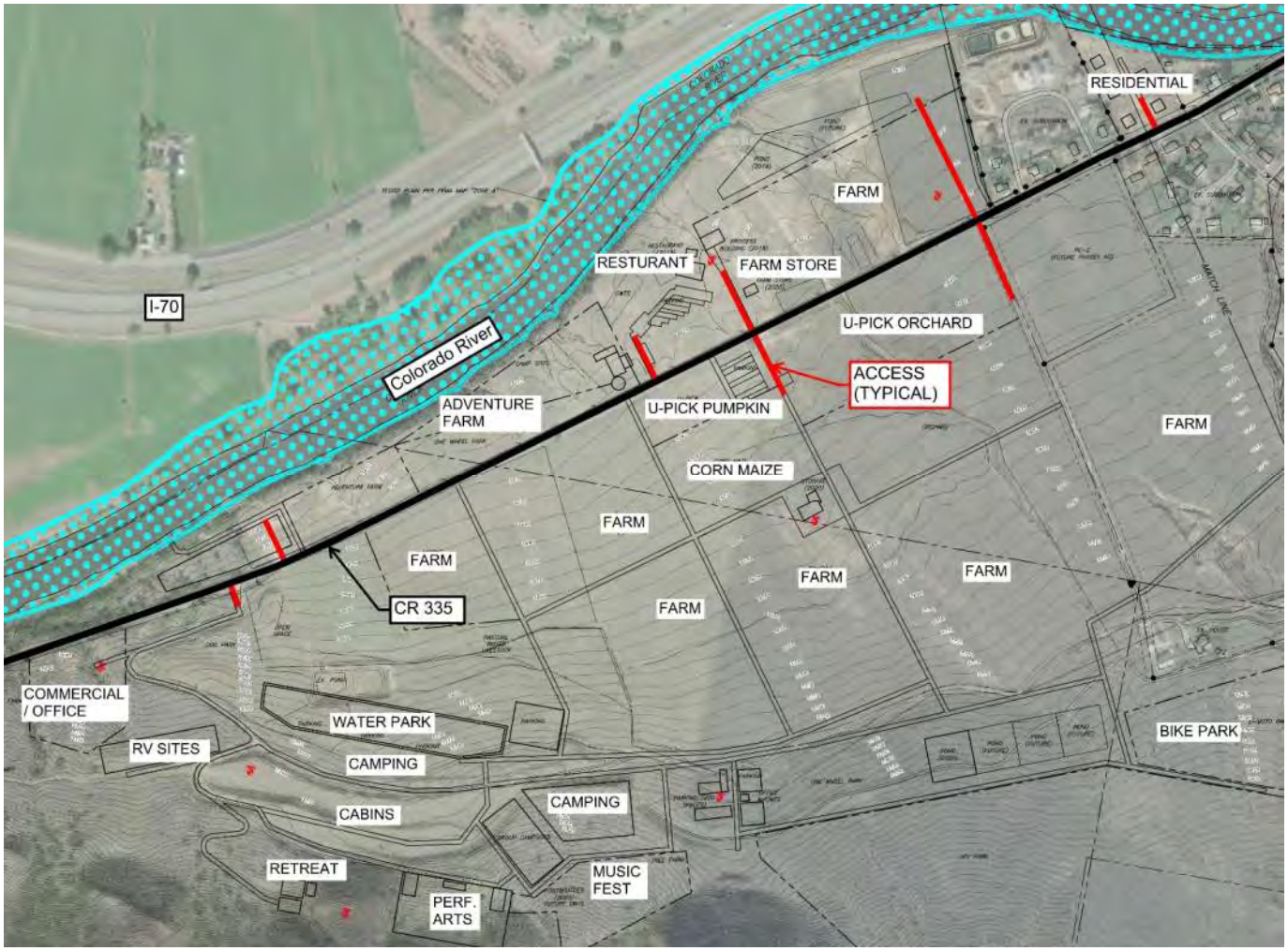

Figure 2 – Conceptual Development Plan

3.0 Methodology and Assumptions

This traffic impact study has been prepared in accordance with section 2.3(5) of the State Highway Access Code (SHAC) and the methodology and assumptions are provided in this section. The assumptions will provide a conservative analysis for the purposes of assessing traffic impacts resulting from full buildout of the proposed development. The construction is anticipated to occur over several years.

The proposed development access volumes will be determined to evaluate the need for auxiliary turn lanes. The CR 335 and Bruce Road intersection as the only route to the project area will be analyzed using HCM 6th Edition (unsignalized) methodology. Intersection analysis was performed using the Synchro 11 analysis package to estimate the capacity of the intersection.

The MOE's that are compared for this study include LOS, delay and 95th percentile queue length. The MOE's will be reported for each analysis scenario to determine if the current intersection operates adequately. The queue length reported is based upon the average of ten 60-minute Simtraffic modeling runs.

The traffic modeling output is contained in Appendix C.

Baseline Traffic
Existing traffic data for CR 335 and the CR 335 and Bruce Road intersection was obtained from the traffic counts by SGM collected Wednesday and Thursday, January 29th and 30th, 2020. Peak hour factors, directional distribution and other inputs are based upon the January traffic data.

The heavy vehicle percentage used in the modeling is input as 2% based upon CDOT 2015 traffic data obtained for the I-70 Exit 105 interchange project.

January 2020 counts, and the 2015 CDOT data are provided in Appendix D.

Analysis Years
Operational analysis of the Baseline traffic (2022), 20-year Background traffic (2042) and 20-year Total (background + project) traffic (2042) was performed. The 2022 traffic counts have been factored to 2022 Baseline traffic volumes using the 20-year factor of 1.28 (2-year 1.0128) as described below. 2042 Background traffic volumes were used from the 2015 CDOT traffic data. CDOT used a 20-year factor for the roadway segments in the study area as shown below:

- NB Bruce Road: 20-year factor of 1.30
- SB Bruce Road: 20-year factor of 1.25
- NB/SB Average: 20-year factor of 1.28

Development Land Use Rates and Distribution
The Nutrient Farm is a unique development, with few land use types that are included in the typically referenced ITE Trip Generation Manual, 10th Edition. As such, the analysis consisted of a comparison of the estimated number of visitors, the maximum capacity of use space, and the required parking spaces based on Garfield County LUDC; coupled with the use of engineering judgement to develop trip generation rates for several of the land uses. The rate analysis then correlated additional land use types to similar trip generation rates from the ITE Trip Generation Manual. The land use types presented in the ITE Trip Generation Manual and shown in Table 1 were input into the ITE web-based Trip Generation Manual in conjunction with the design hour distribution from the same source resulting in the design hour trip generation rates shown in Table 2.

TABLE 2 - DESIGN HOUR TRIP GENERATION RATE BY LAND USE

					Design Hour Rates					
	Number		ITE	Daily Design	AM	AM	AM	PM	PM	PM
Land Use Type	of Units	Unit	Code	Rate	Rate	Entering	Exiting	Rate	Entering	Exiting
Single Family Detached	19	Dwelling	210	11.89	0.96	0.24	0.72	1.09	0.68	0.40
ADU (MF, Low-rise)	20	Dwelling	220	5.50	0.52	0.12	0.40	0.71	0.44	0.26
Warehousing	140	ksf	150	1.91	0.30	0.23	0.07	0.32	0.09	0.23
General Office Building	15	ksf	710	11.20	2.71	2.33	0.38	1.00	0.16	0.84
Retail	2	ksf	820	37.75	2.13	1.32	0.81	15.03	7.21	7.81
Supermarket (Farm Sales)	4	ksf	850	106.78	3.82	2.29	1.53	9.24	4.71	4.53
Restaurant	7.5	ksf	932	112.18	9.94	5.47	4.47	9.77	6.06	3.71
Camp / RV / Cabin	67	spaces	*	2.36	0.26	0.14	0.12	0.25	0.16	0.09
Adventure Farm, Off-Road Park, Water Park	193	visitors	**	1.33	0.13	0.09	0.03	0.13	0.06	0.07
Performing Arts	100	visitors	**	1.33	0.00	0.00	0.00	0.50	0.05	0.45
Retreat	12	rooms	***	2.00	0.50	0.45	0.05	0.50	0.05	0.45
Music Festival	350	visitors	****	1.00	0.00	0.00	0.00	0.33	0.03	0.30

The land use types that are shown with an asterisk, are calculated based on the description provided in Table 3, and further described in narrative on the following page. The design hour distributions for the corresponding land uses are as shown in Table 3.

TABLE 3 – DESIGN HOUR DISTRIBUTION BY LAND USE

ITE Ttrip Generation Manual, 10th Edition	ITE Code	Basis of Rate	Trip Generation Method	Design Hour Distribution			
				AM IN	AM OUT	PM IN	PM OUT
Single Family Detached	210	Fitted Curve	Peak Hour adjacent Street	25%	75%	63%	37%
Multi-Family (Low-rise)	220	Fitted Curve	Peak Hour adjacent Street	23%	77%	63%	37%
Warehousing	150	Fitted Curve	Peak Hour adjacent Street	77%	23%	27%	73%
General Office Building	710	Fitted Curve	Peak Hour adjacent Street	86%	14%	16%	84%
Retail	820	Ave / Fitted Rate (Peak Hr adj street adj)		62%	38%	48%	52%
Supermarket	850	Ave Rate	Peak Hour adjacent Street	60%	40%	51%	49%
Restaurant	932	Ave Rate	Peak Hour adjacent Street	55%	45%	62%	38%
Camp / RV / Cabin*	*	*KOA Camground count 7/20/16 (Silt, CO)		55%	45%	64%	36%
		*Average Rate (in PCE's)		0.26	0.26	0.25	0.25
Adventure Farm, Off-Road Park,, Water Park**	**	**Estimated Visitors / 1.5 visitors per vehicle		65%	35%	45%	55%
Performing Arts**	**	**Estimated Visitors/ 1.5 visitors per vehicle		90%	10%	10%	90%
Retreat**	***	***Estimated Visitors/ 1.0 visitors per vehicle		90%	10%	10%	90%
Music Festival***	****	****Estimated Vehcle based on parking capacity - Campground spaces		90%	10%	10%	90%

The trip generation time period and calculation methods are noted in Table 3. The calculations are standard ITE trip generation methods with the exceptions and justification provided below:

- Supermarket – Considers the Farm Store and U-Pick square footage.
- Camp / RV / Cabin - ITE's *Trip Generation (10th Edition)* provides trip generation rates for a Campground and RV Park facility (ITE Code 416) that have 3-6 associated studies for weekday AM and PM peak hour for locations in Rhode Island, Vermont, and Washington from 1990-2010. Local and more recent trip generation information are more useful and preferred for use in this study. McDowell Engineering performed a local Trip Generation study at the KOA Campground in Silt, Colorado, located south and west of I-70 exit 97. The trip generation count was completed in July 2016 and consisted of counting RV's, passenger vehicles and trucks / trailers, the generation rates are provided in Passenger Car Equivalents (PCEs).
- Adventure Farm, Off-Road Park, Water Park; Performing Arts; Retreat – These are unique uses with little or no beneficial data available in the *Trip Generation (10th Edition).* Visitors were estimated by analysis of the project *Water Demand Study*, parking analysis based on Garfield County Land Use Code, maximum capacity of use space and engineering judgement. Vehicle trips were calculated assuming and average of 1.5 visitors per vehicle (Retreat 1.0 visitors per vehicle) and two trips per day (in & out). Performing Arts events are assumed to have no traffic during the AM design hour.
- Music Festival – This is a unique use with no beneficial data available in the *Trip Generation (10th Edition).* Visitors were estimated by analysis of the project *Water Demand Study*, parking analysis based on Garfield County Land Use Code,

(maximum 175 parking spaces), maximum capacity of use space and engineering judgement. Vehicle trips were calculated based upon parking availability and an average of 2 visitors per vehicle and two trips per day (in & out). Music Festival events are assumed to have no traffic during the AM design hour.

See Appendix G for additional background data.

Design Hour Volume

The proposed development design hour volumes calculated in this study are conservative and generally based on all land use types open and occurring in the same timeframe. The project design hour traffic volumes are added to the 2042 Background volumes for the weekday AM and PM design hour.

Trip Reductions

Internal Capture

As with any mixed-use development, a portion of the trips generated by a land use will be attracted to another on-site land use as influenced by proximity, and therefore will not impact the site access beyond the CR 335 corridor, and practically, individual access locations. For instance, a portion of the customers at the restaurant can be expected to consist of occupants of the residential housing or campground areas who may simply walk or bike due to proximity. They may also drive to and from interior origins and destinations and not impact the CR 335 Bruce Road intersection. Developments with relatively diverse land uses tend to generate more internal trips than do developments that are principally of one type of land use. The ITE Trip Generation Handbook, 3rd Edition, using NCHRP Report 684 – Enhancing Internal Trip Capture Estimation for Mixed Use Developments methodology has been used with the unique uses categorized into the NCHRP 684 spreadsheet in the following manner.

TABLE 4 – INTERNAL TRIP REDUCTION LAND USE CATEGORIES

Land Use	Development Data (*For Information Only*)		
	ITE LUCs[1]	Quantity	Units
Office / Warehousing	750 / 150	155	ksf
Retail / Supermarket	820 / 850	6	ksf
Restaurant	932	8	ksf
Entertainment (Adventure, Off-Road, Water Park, Perf Arts, Retreat, Music)			
Residential	220	39	dwelling
Hotel (Camping / RV / Retreat)	*	79	spaces / rooms

This development is well-suited for significant internal trips from residents and destination campground visitors for retail, restaurant, and on-site activities or non-staying visitors with more than a single destination (i.e., water park, restaurant, adv. farm). Using the general guidance and engineering judgement from the above table, the following table shows the internal trip capture rates applied to specific uses based on NCHRP 684. Background calculation data is provided in the full NCHRP 684 spreadsheet attached in Appendix G.

TABLE 5 -INTERNAL CAPTURE RATES BY LAND USE

				Trip Reduction			
	Number		ITE	Internal Capture Rates			
Land Use Type	of Units	Unit	Code	AM IN	AM OUT	PM IN	PM OUT
Single Family Detached	19	Dwelling	210	9%	24%	58%	45%
ADU (MF, Low-rise)	20	Dwelling	220	9%	24%	58%	45%
Warehousing	140	ksf	150	22%	88%	36%	11%
General Office Building	15	ksf	710	22%	88%	36%	11%
Retail	2	ksf	820	41%	42%	66%	65%
Supermarket (Farm Sales)	4	ksf	850	41%	42%	66%	65%
Restaurant	7.5	ksf	932	33%	19%	30%	68%
Camp / RV / Cabin	67	spaces	*	5%	23%	44%	14%
Adventure Farm, Off-Road Park, Water Park	193	visitors	**	0%	0%	14%	3%
Performing Arts	100	visitors	**	0%	0%	14%	3%
Retreat	12	rooms	***	5%	23%	44%	14%
Music Festival	350	visitors	****	0%	0%	14%	3%

Multi-modal

Multi-modal trips could consist of walking, biking, car-pooling and transit options. The development site is not convenient to transit or within a typical US average walking and biking distance for a commute or other trip of 0.25 miles and 3 miles, respectively. A multi-modal reduction is not used in the study.

3.1 Intersection Capacity Analysis

Weekday AM and PM level of service estimates were prepared in accordance with the Highway Capacity Manual (Transportation Research Board, 2016). For unsignalized intersections, the Highway Capacity Manual defines level of service and delay in terms of seconds of stopped delay per vehicle, which is based on the number of acceptable gaps in the conflicting traffic stream. In general, the traffic movements analyzed are those controlled by stop signs or yield signs, and the left turn movements from the uncontrolled major street. The following table represents the level of service criteria for unsignalized intersections:

TABLE 6 - LEVEL OF SERVICE (LOS) CRITERIA

Unsignalized Intersections

Level of Service	Delay (seconds)
A	< 10.0
B	10.1 to 15
C	15.1 to 25
D	25.1 to 35
E	35.1 to 50
F	> 50.0

Source: Highway Capacity Manual, 2010

The "overall" intersection level of service at an unsignalized intersection corresponds with the average delay experienced on the minor street approaches and the uncontrolled major

street movements. The unconflicted major street through movements are considered to have no delay. Because the majority of the intersection movements are major street movements with no delay, the overall intersection results in a LOS with less delay than the minor street approaches and conflicting major street movements (left turns) actually experience.

In general, CDOT considers the overall intersection operation of LOS "D" or better acceptable during the peak hours. The goal is to also provide a similar LOS for each controlled intersection movement and/or approach. The MOE analysis by movement provides an overview of all intersection approach and conflicting movements and provides a more realistic picture of operations by controlled movement or approach as experienced and perceived by users. The MOE's also provide a valuable reference point for comparison of LOS, Delay and Queue between scenarios.

4.0 Baseline Traffic Conditions

4.1 Existing Roadways and Intersections

CR 335 is the Garfield County roadway that serves the south side of the Colorado River corridor from Riverbend to the west near Silt. CR 335 would be classified as a Frontage Road (F-R) in the CDOT classification system. The segment of CR 335 within the study area is classified by Garfield County as a Minor Collector based upon average daily traffic volumes and current roadway configuration.

CR 335 through the project area location consists of two 12-foot wide travel lanes with a variable gravel shoulder from 0-2 ft. The developed existing access locations in the study corridor are listed below, in miles east of Bruce Road.

- Coal Ridge Lane (2.25 mi) – Ranch House Single Family (SF) home
- Riverboat Drive (2.29 and 2.36 mi) – 15 SF homes
- Riverbend Drive (2.46 mi) – 44 SF homes

There are 5-6 existing field accesses from 1.54 mi to Coal Ridge Lane.

The posted speed limit on CR 335 is 35 mph.

Bruce Road is the connection to the I-70 exit 105 New Castle interchange. It is a 26 ft paved surface with 12 ft travel lanes.

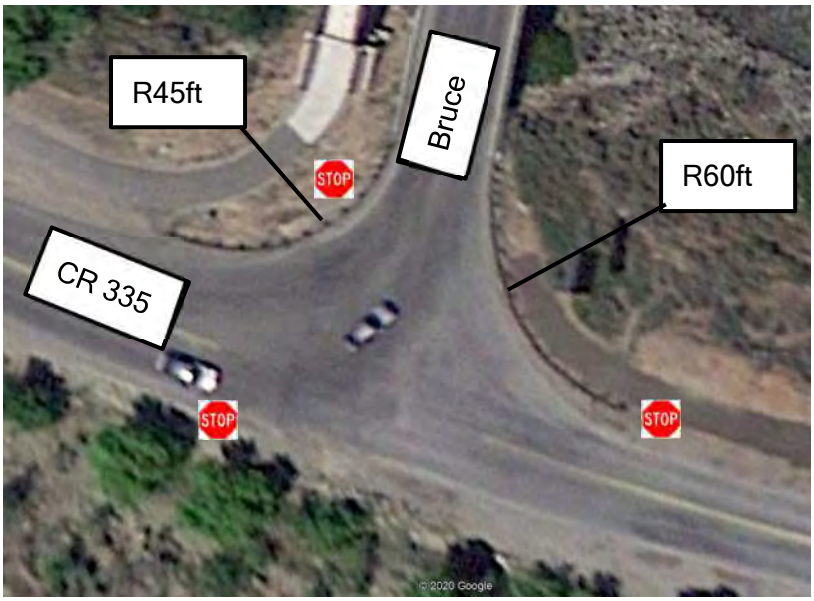

Figure 3 – CR 335 and Bruce Road Intersection

The intersection of CR 335 and Bruce Road is an all-way stop condition. The intersection layout is shown in Figure 3

4.2 Baseline Traffic Volumes (2022)

Existing traffic data for CR 335 and the CR 335 and Bruce Road intersection was obtained from the traffic counts by SGM collected Wednesday and Thursday, January 29th and 30th, 2020.

Directional distribution at the CR 335 and Bruce Road intersection is 95% oriented to and from the north, and 5% oriented to and from the west.

The 3-day average peak hour data at the CR 335 and Bruce Road intersection is summarized below:

- AM peak hour 7:30 to 8:30; DHV is 417
- PM peak hour 4:30 to 5:30; DHV at is 446.
- AM PHF 0.86; PM PHF 0.93
- CR 335 ADT of 400-500 vpd east of Park Drive

January 2020 traffic volumes and 2015 CDOT data are provided in Appendix D.

4.3 Baseline Intersection Capacity Analysis

Using the baseline traffic volumes shown in Figure 4 and 5 in Appendix B, the capacity analysis was modeled in Synchro to estimate level of service and delay for each intersection.

Table 6 shows the overall results of the capacity analysis for the existing intersection. The intersection operates at an overall LOS A and approaches operate at LOS B or better under baseline conditions.

The MOE's; LOS, delay (seconds) and 95th percentile queue lengths (feet) by approach movement are also presented in Table 7 and provide a reference point of 2022 Baseline traffic conditions to understand the effect of growth unrelated to the proposed development presented with the 2042 Background traffic volumes.

TABLE 7 - BASELINE INTERSECTION OVERALL LOS AND MOE SUMMARY

			2022 BASELINE TRAFFIC				
All-way STOP			*Overall LOS*	*Overall Delay*	LOS	Delay	95th Q
Approach Movement							
CR 335 / Bruce Road	EB	AM	*A*	*9.1*	B	10.1	81
		PM	*A*	*9.9*	A	9.6	54
	WB	AM			A	7.6	59
		PM			A	7.9	42
	SB	AM			A	8.5	63
		PM			B	10.4	78

Delay expressed as average delay per vehicle in seconds/vehicle

Queuing is reported for each approach movement at the study intersection to provide another indication of intersection performance. A queue length of 20 ft represents a single vehicle.

5.0 Background Traffic (2042)

The baseline CR 335 traffic volumes were used as a basis to develop the 20-year (2042) Background traffic volumes. The 2022 Baseline volumes were adjusted using 2042 CDOT design volumes minus project developed traffic. The project developed volumes were subtracted from the 2042 CDOT design volumes because the development of the Nutrient Farm practically represents nearly full buildout of the east end of the CR 335 corridor.

5.1 Background Intersection Capacity Analysis

Using the 2042 Background traffic volumes, the capacity analysis was modeled in Synchro to determine level of service and delay for the intersection. The background traffic volumes are provided in Figures 6 and 7 in Appendix B.

Table 8 shows the overall results of the capacity analysis for the existing intersection. The intersection operates at an overall LOS B and approaches operate at LOS B or better under background conditions.

TABLE 8 - BACKGROUND INTERSECTION OVERALL LOS AND MOE SUMMARY

			2042 BACKGROUND TRAFFIC				
All-way STOP			*Overall LOS*	*Overall Delay*	LOS	Delay	95th Q
Approach Movement							
CR 335 / Bruce Road	EB	AM	*B*	*12.0*	B	14.4	103
		PM	*B*	*11.8*	B	10.4	63
	WB	AM			A	8.7	62
		PM			A	8.2	45
	SB	AM			A	9.8	58
		PM			B	12.8	99

MOE analysis is also presented in Table 8 and provides an overview of intersection approach movements with 2042 Background traffic conditions for comparison to 2022 Baseline traffic conditions to understand the effect of background traffic volumes.

6.0 Total Traffic (2042)

6.1 Project Trip Generation and Assignment

ITE's Trip Generation Manual (10th Edition) and engineering judgement was used to provide trip generation rates and directional distribution for the proposed mixed-use development as described in 3.0 Methodology. The resulting trip generation is shown in Table 9 following the application of trip reductions also described in Section 3.0.

The Nutrient Farm traffic volumes have been calculated as total trips and total trips less music festival for analysis of each total traffic scenario.

TABLE 9 - PROJECT TRIP GENERATION

				Design Hour Volumes			
	Number		ITE	AM	AM	PM	PM
Land Use Type	of Units	Unit	Code	IN	OUT	IN	OUT
Single Family Detached	19	Dwelling	210	5	11	5	4
ADU (MF, Low-rise)	20	Dwelling	220	2	6	4	3
Warehousing	140	ksf	150	25	1	8	29
General Office Building	15	ksf	710	27	1	1	12
Retail	2	ksf	820	2	1	5	6
Supermarket (Farm Sales)	4	ksf	850	5	3	6	6
Restaurant	7.5	ksf	932	27	28	32	9
Camp / RV / Cabin	67	spaces	*	16	8	4	15
Adventure Farm, Off-Road Park, Water Park	193	visitors	**	17	6	10	25
Performing Arts	100	visitors	**	0	0	4	44
Retreat	12	rooms	***	5	1	1	4
Music Festival	350	visitors	****	0	0	10	101
			TOTAL TRIPS:	**131**	**66**	**90**	**258**

The assignment of project traffic for the total traffic scenarios with and without the music festival from the Nutrient Farm to the CR 335 and Bruce Road intersection is shown in the figures below for the AM and PM design hour.

		124	187	63		
		AM DESIGN HOUR				
		BRUCE ROAD				
				124		
					63	
CR 335	7				3	**CR 335**
		76	225	149		
		PM DESIGN HOUR				
		BRUCE ROAD				
				76		
					149	
CR 335	4				8	**CR 335**

Figure 8
CR 335 / Bruce Road Trip Assignment Project LESS Music Fest

		0	0	0		
		AM DESIGN HOUR				
		BRUCE ROAD				
				0		
					0	
CR 335	0				0	**CR 335**
		10	105	96		
		PM DESIGN HOUR				
		BRUCE ROAD				
				10		
					96	
CR 335	1				5	**CR 335**

Figure 9
CR 335 / Bruce Road Trip Assignment Project Music Fest ONLY

A full calculation of trip reductions and directional distribution is provided in the Appendix E.

6.2 Total 2042 Traffic Volumes

The 2042 Total traffic volumes less music fest is the sum of the 2042 Background traffic volumes (Figures 6 & 7) plus the proposed site-generated volumes (Figures 8 & 9).

Total traffic volumes less music fest is shown in Figures 10 and 11 in Appendix B for the study intersections as shown in the Synchro output.

The Total traffic volumes including the Music Festival is shown in Figures 12 & 13 in Appendix B.

6.3 Total Intersection Capacity Analysis

Table 10 shows the overall results of the capacity analysis for the existing All-way Stop condition at the CR 335 and Bruce Road intersection with Total traffic less music festival scenario.

TABLE 10 - TOTAL INTERSECTION (LESS MUSIC) OVERALL LOS AND MOE SUMMARY

			2042 TOTAL TRAFFIC (less Music)				
All-way STOP			*Overall LOS*	*Overall Delay*	LOS	Delay	95th Q
Approach Movement							
CR 335 / Bruce Road	EB	AM	*C*	*16.4*	C	20.0	119
		PM	*C*	*18.3*	B	12.1	68
	WB	AM			B	11.4	78
		PM			B	11.4	72
	SB	AM			C	15.7	84
		PM			D	23.5	122

The overall intersection operates at LOS C in the AM and PM design hour. The MOE analysis is also presented in Table 10 and provides an overview of intersection approach movements for 2042 Total traffic (less music) conditions to understand the effect of project traffic volumes in addition to the 2042 Background traffic. All approach movements operate acceptably at LOS D or better.

The 2042 Total traffic (with music) conditions, the overall intersection operates at LOS C in the AM and PM design hour. The MOE analysis is also presented in Table 11, all approach movements operate at LOS D or better.

TABLE 11 - TOTAL INTERSECTION (WITH MUSIC) OVERALL LOS AND MOE SUMMARY

			2042 TOTAL TRAFFIC (with Music)				
All-way STOP			*Overall LOS*	*Overall Delay*	LOS	Delay	95th Q
Approach Movement							
CR 335 / Bruce Road	EB	AM	*C*	*16.4*	C	20.0	119
		PM	*C*	*23.4*	B	12.9	69
	WB	AM			B	11.4	78
		PM			C	15.5	83
	SB	AM			C	15.7	84
		PM			D	31.9	128

Overall, the three-way Stop controlled intersection operates acceptably in both 2042 Total traffic scenario's, with acceptable delay and queue lengths. The longer delays during music events can be managed and alleviated using Uniform Traffic Control or Certified Traffic Control supervision at the CR 335 and Bruce Road and CR 335 and event access intersections for the larger events.

For reference, the distance along Bruce Road from the CR 335 intersection to the south side I-70 ramp intersections is 450 feet. CDOT planned improvements at the Exit 105 interchange are currently in design phase and include a roundabout at the I-70 south ramps. The distance to the limits of that construction and roundabout approach is 350 feet. Both distances are more than adequate to accommodate design hour queuing without impact to the I-70 ramp intersections.

The combined baseline, background and total LOS and MOE tables are provided in the Appendix F as a combined table for comparison purposes.

6.4 State Highway Access Permit Evaluation

Based on the State Highway Access Code (SHAC), an access permit is required when a change of greater than 20% occurs when accessing a state highway. A comparison of the project traffic volumes (less music festival) and the Baseline 2022 traffic volumes are provided below:

- AM – 187 vph (Project Traffic) / 465 vph (Baseline 2022 traffic) = 29%
- PM - 225 vph (Project Traffic) / 497 vph (Baseline 2022 traffic) = 31%

Based on project developed traffic volumes in comparison to Baseline 2022 traffic volumes crossing the Colorado River bridge approach to I-70, an access permit will be required for the development of the Nutrient Farm project.

6.5 Total Traffic Analysis

CR 335 Two-lane Roadway

The Baseline 2022 Average Daily Traffic (ADT) is approximately 450-500 vehicles per day (vpd) as counted in January 2020 (and factored to 2022) east of Park Drive, the entrance to the riverside apartment buildings. The volume near the CR 335 and Bruce Road intersection is on the order of 1000 vpd. The proposed development traffic will add an estimated 2000 vpd on days when all on-site amenities (less music events) have been constructed and are operating at capacity. The total 2042 ADT is estimated at 2300 vpd east of Park Drive and 2800 vpd west of Park Drive.

The practical capacity of a two-lane rural roadway with a speed limit of 35 mph is on the order of 5000-6000 vpd. Garfield County LUDC Standards call for a Major Collector standard at volumes greater than 2501 vpd. The main geometric difference in roadway template between Minor and Major Collector is shoulder width. The Major Collector standard has a shoulder width 2 ft wider than the Minor standard.

CR 335 and Bruce Road Auxiliary Turn Lanes

The analysis provided shows that the intersection will operate acceptably as an All-way Stop with existing single lane approaches on each leg. Additional intersection approach lanes are not required for operation or safety, as demonstrated by the 95th percentile queue lengths.

Internal Intersections

Internal intersections were not analyzed individually, rather the highest volume intersection was analyzed based on SHAC requirements. The highest volume intersection is the south access to the main camping and cabin, water park, retreat, and performing arts areas. A 20% / 80% east / west traffic distribution is assumed.

Auxiliary turn lane requirements for access to Colorado State Highways are based on the projected DHVs, the speed limit and geometry of the highway adjacent to the access, and the classification of the highway. For design purposes, the speed limit of CR 335 is 35 mph.

Based on the SHAC for an F-R roadway; Auxiliary turn lanes shall be installed according to the criteria below:

- A left turn deceleration lane with taper and storage length is required for any access with a projected peak hour left ingress turning volume greater than 25 vph. The taper length will be included within the required deceleration length.
    - *WB left volume 8 vph – Lane NOT warranted*
- A right turn deceleration lane and taper length is required for any access with a projected peak hour right ingress turning volume greater than 50 vph. The taper length will be included within the required deceleration length.
    - *EB right volume 30 vph – Lane NOT warranted*
- A right turn acceleration lane and taper length is required for any access with a projected peak hour right turning volume greater than 50 vph when the posted speed on the highway is greater than 40 mph. The taper length will be included within the required acceleration length.
    - *The lane is NOT warranted since the volume is 8 vph and the speed limit is 35 mph at the access.*
- A left turn acceleration lane may be required if it would be a benefit to the safety and operation of the roadway or for specifically identified and documented safety and operation reasons a left turn acceleration lane may be required when unique location factors such as; highway speed and traffic density, access volume, the volume of commercial trucks, the influence of nearby access, existing highway auxiliary lanes close to the access, nearby traffic control devices, available stopping sight distance, and where other topographic and highway design factors exist that determine the need.
    - *NB Left Turn Acceleration lane is NOT warranted (volume 70 vph) based on the following conditions:*
        - The conflicting volumes are less than 50 vph
        - The posted WB speed limit is 35 mph
        - The entering sight distance is acceptable

6.6 Sight Distance and Access Conditions

The CR 335 and Bruce Road intersection is currently an All-way Stop intersection. There is adequate sight distance at the intersection based on a posted speed limit of 35 mph (450 feet). Google Earth street view images are provided following.

Figure 13 – CR 335 WB

Figure 14 – CR 335 EB

Figure 15 – Bruce Road looking west

Figure 15 – Bruce Road looking east

6.7 Road Impact Fee Calculation

The Road Impact Fee Calculation based on Garfield County LUDC is estimated below:

TABLE 12 - ROAD IMPACT FEE CALCULATION

	Number		Road Impact Fee	
Land Use Type	of Units	Unit	Unit Fee	Total Fee
Single Family Detached	19	Dwelling	$ 1,332	$ 25,308
ADU (MF, Low-rise)	20	Dwelling	$ 986	$ 19,720
Warehousing	140	ksf	$ 379	$ 53,060
General Office Building	15	ksf	$ 1,092	$ 16,380
Retail	2	ksf	$ 2,523	$ 5,046
Supermarket (Farm Sales)	4	ksf	$ 2,523	$ 10,092
Restaurant	7.5	ksf	$ 2,523	$ 18,923
Camp / RV / Cabin	67	spaces	$ 486	$ 32,562
Adventure Farm, Off-Road Park, Water Park	193	visitors	$ 2,523	$ 18,166
Performing Arts	100	visitors	$ 2,523	$ 12,615
Retreat	12	rooms	$ 486	$ 5,832
Music Festival	350	visitors		$ -
				$ 217,703

The above calculation is approximate and will be based upon actual development and paid at time of development. These impacts fees can be used by the County for any needed CR 335 shoulder widening if the future traffic volume exceeds the 2501 vpd Minor Collector threshold based upon Nutrient Farm development activities.

7.0 Conclusions and Proposed Mitigation Measures

7.1 Summary of Conclusions

- The existing roadway network and adjacent intersection operate safely and at an acceptable LOS in the total traffic scenario with the All-way Stop condition at the CR 335 and Bruce Road intersection.
- The proposed development access location(s) will operate acceptably and safely as single lane approaches to CR 335 in the Total traffic scenario.
- CR 335 estimated 2042 Total traffic volume exceeds the Minor Collector standard based on the proposed development activities.
- The developed project traffic volumes meet the requirement for a new access permit for volumes on Bruce Road at the Colorado River bridge.
- The Road Impact Fee Calculation results in an estimated fee of $217,703. The calculation is approximate and will be based upon actual development and paid at time of development.

7.2 Proposed Mitigation Measures

- Nutrient Farm access road intersections constructed on CR 335 shall provide acceptable sight distance based on 35 mph design (450 ft). Design sight triangles must be developed and maintained as clear zone with the development each access to accommodate passenger vehicles and single-unit trucks.
- The CR 335 estimated 2042 Total traffic volume exceeds the Minor Collector standard based on the proposed development activities. If the actual development activity exceeds that threshold, the Road Impact Fees will be used to widen and pave a 2 ft shoulder on each side of CR 335 from Park Drive to Bruce Road to maintain the County Roadway Standards.
- The CR 335 and Bruce Road intersection and CR 335 accesses operate adequately including the projected Music Festival traffic volumes when modeled in this study. Because of the variability of the peak flow rate associated with those events, the owner shall consider using either Uniform Traffic Control or Certified Traffic Control supervision at the CR 335 and Bruce Road and CR 335 and event access intersections to provide safe operations during the peak entry and exiting periods of the event for smaller events and should be required for larger events.

Appendix A

Conceptual Development Plan

I-70

Colorado River

COLORADO RIVER

FLOOD PLAIN PER FEMA MAP "ZONE A"

ADVENTURE FARM

RESTURANT

FARM STORE

U-PICK ORCHARD

ACCESS (TYPICAL)

U-PICK PUMPKIN

RESIDENTIAL

FARM

CORN MAIZE

CR 335

COMMERCIAL / OFFICE

RV SITES

WATER PARK

CAMPING

CABINS

RETREAT

PERF. ARTS

MUSIC FEST

BIKE PARK

MATCH LINE

POND (FUTURE)

POND (2019)

EX. SUBDIVISION

RESTAURANT (2019)

PROCESS BUILDING (2019)

FARM STORE (2020)

OWTS

PARKING

CAMP SITES

ONE WHEEL PARK

OPEN SPACE

DOG PARK

PASTURE RAISED LIVESTOCK

EX. POND

GROUP CAMPSITES

PORTAPOTTIES (2020) FUTURE OWTS

TREE FARM

ORCHARD

STORAGE (2020)

PARKING (200 SPACES)

OFFICE W/ OWTS

ATV PARK

RE-2 (FUTURE PHASES AG)

EX. HOUSE

POND (2020)

POND (FUTURE)

Appendix B

Traffic Volume Figures 4-7, 10-12

FIGURE 4 - 2022 AM BASELINE VOLUMES

FIGURE 5 - 2022 PM BASELINE VOLUMES

FIGURE 6 - 2042 AM BACKGROUND VOLUMES

FIGURE 7 - 2042 PM BACKGROUND VOLUMES

FIGURE 10 2042 AM TOTAL VOLUMES less MUSIC FEST

FIGURE 11 2042 PM TOTAL VOLUMES less MUSIC FEST

FIGURE 12 - 2042 AM TOTAL VOLUMES with MUSIC FEST

FIGURE 13 - 2042 PM TOTAL VOLUMES with MUSIC FEST

Appendix C

Synchro output

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	226	2	3	82	24	133
Future Vol, veh/h	226	2	3	82	24	133
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	263	2	3	95	28	155
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	10.1	7.6	8.5
HCM LOS	B	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	99%	0%	15%
Vol Thru, %	1%	4%	0%
Vol Right, %	0%	96%	85%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	228	85	157
LT Vol	226	0	24
Through Vol	2	3	0
RT Vol	0	82	133
Lane Flow Rate	265	99	183
Geometry Grp	1	1	1
Degree of Util (X)	0.342	0.112	0.218
Departure Headway (Hd)	4.64	4.067	4.29
Convergence, Y/N	Yes	Yes	Yes
Cap	774	880	838
Service Time	2.667	2.098	2.314
HCM Lane V/C Ratio	0.342	0.113	0.218
HCM Control Delay	10.1	7.6	8.5
HCM Lane LOS	B	A	A
HCM 95th-tile Q	1.5	0.4	0.8

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	135	2	3	42	86	235
Future Vol, veh/h	135	2	3	42	86	235
Peak Hour Factor	0.80	0.80	0.80	0.80	0.90	0.80
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	169	3	4	53	96	294
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	9.6	7.8	10.4
HCM LOS	A	A	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	99%	0%	27%
Vol Thru, %	1%	7%	0%
Vol Right, %	0%	93%	73%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	137	45	321
LT Vol	135	0	86
Through Vol	2	3	0
RT Vol	0	42	235
Lane Flow Rate	171	56	389
Geometry Grp	1	1	1
Degree of Util (X)	0.239	0.069	0.443
Departure Headway (Hd)	5.018	4.422	4.097
Convergence, Y/N	Yes	Yes	Yes
Cap	714	807	880
Service Time	3.06	2.469	2.12
HCM Lane V/C Ratio	0.239	0.069	0.442
HCM Control Delay	9.6	7.8	10.4
HCM Lane LOS	A	A	B
HCM 95th-tile Q	0.9	0.2	2.3

Intersection	
Intersection Delay, s/veh	12
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	343	3	3	135	25	142
Future Vol, veh/h	343	3	3	135	25	142
Peak Hour Factor	0.80	0.80	0.75	0.75	0.80	0.80
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	429	4	4	180	31	178
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	14.4	8.7	9.8
HCM LOS	B	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	99%	0%	15%
Vol Thru, %	1%	2%	0%
Vol Right, %	0%	98%	85%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	346	138	167
LT Vol	343	0	25
Through Vol	3	3	0
RT Vol	0	135	142
Lane Flow Rate	432	184	209
Geometry Grp	1	1	1
Degree of Util (X)	0.579	0.223	0.281
Departure Headway (Hd)	4.823	4.36	4.845
Convergence, Y/N	Yes	Yes	Yes
Cap	744	815	737
Service Time	2.883	2.429	2.909
HCM Lane V/C Ratio	0.581	0.226	0.284
HCM Control Delay	14.4	8.7	9.8
HCM Lane LOS	B	A	A
HCM 95th-tile Q	3.8	0.9	1.2

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	150	3	3	46	110	300
Future Vol, veh/h	150	3	3	46	110	300
Peak Hour Factor	0.80	0.80	0.80	0.80	0.90	0.80
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	188	4	4	58	122	375
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	10.4	8.2	12.8
HCM LOS	B	A	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	98%	0%	27%
Vol Thru, %	2%	6%	0%
Vol Right, %	0%	94%	73%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	153	49	410
LT Vol	150	0	110
Through Vol	3	3	0
RT Vol	0	46	300
Lane Flow Rate	191	61	497
Geometry Grp	1	1	1
Degree of Util (X)	0.28	0.08	0.578
Departure Headway (Hd)	5.274	4.711	4.186
Convergence, Y/N	Yes	Yes	Yes
Cap	677	753	860
Service Time	3.342	2.788	2.217
HCM Lane V/C Ratio	0.282	0.081	0.578
HCM Control Delay	10.4	8.2	12.8
HCM Lane LOS	B	A	B
HCM 95th-tile Q	1.1	0.3	3.8

Intersection	
Intersection Delay, s/veh	16.4
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	343	9	7	197	150	142
Future Vol, veh/h	343	9	7	197	150	142
Peak Hour Factor	0.80	0.80	0.75	0.75	0.80	0.80
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	429	11	9	263	188	178
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	20	11.4	15.7
HCM LOS	C	B	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	97%	0%	51%
Vol Thru, %	3%	3%	0%
Vol Right, %	0%	97%	49%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	352	204	292
LT Vol	343	0	150
Through Vol	9	7	0
RT Vol	0	197	142
Lane Flow Rate	440	272	365
Geometry Grp	1	1	1
Degree of Util (X)	0.684	0.387	0.566
Departure Headway (Hd)	5.599	5.122	5.584
Convergence, Y/N	Yes	Yes	Yes
Cap	642	699	646
Service Time	3.647	3.178	3.636
HCM Lane V/C Ratio	0.685	0.389	0.565
HCM Control Delay	20	11.4	15.7
HCM Lane LOS	C	B	C
HCM 95th-tile Q	5.4	1.8	3.5

Intersection	
Intersection Delay, s/veh	18.4
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	150	7	11	195	186	300
Future Vol, veh/h	150	7	11	195	186	300
Peak Hour Factor	0.80	0.80	0.80	0.80	0.90	0.80
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	188	9	14	244	207	375
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	12.1	11.4	23.6
HCM LOS	B	B	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	96%	0%	38%
Vol Thru, %	4%	5%	0%
Vol Right, %	0%	95%	62%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	157	206	486
LT Vol	150	0	186
Through Vol	7	11	0
RT Vol	0	195	300
Lane Flow Rate	196	258	582
Geometry Grp	1	1	1
Degree of Util (X)	0.33	0.374	0.788
Departure Headway (Hd)	6.05	5.227	4.875
Convergence, Y/N	Yes	Yes	Yes
Cap	593	685	745
Service Time	4.104	3.278	2.911
HCM Lane V/C Ratio	0.331	0.377	0.781
HCM Control Delay	12.1	11.4	23.6
HCM Lane LOS	B	B	C
HCM 95th-tile Q	1.4	1.7	7.9

Intersection	
Intersection Delay, s/veh	16.4
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	343	9	7	197	150	142
Future Vol, veh/h	343	9	7	197	150	142
Peak Hour Factor	0.80	0.80	0.75	0.75	0.80	0.80
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	429	11	9	263	188	178
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	20	11.4	15.7
HCM LOS	C	B	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	97%	0%	51%
Vol Thru, %	3%	3%	0%
Vol Right, %	0%	97%	49%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	352	204	292
LT Vol	343	0	150
Through Vol	9	7	0
RT Vol	0	197	142
Lane Flow Rate	440	272	365
Geometry Grp	1	1	1
Degree of Util (X)	0.684	0.387	0.566
Departure Headway (Hd)	5.599	5.122	5.584
Convergence, Y/N	Yes	Yes	Yes
Cap	642	699	646
Service Time	3.647	3.178	3.636
HCM Lane V/C Ratio	0.685	0.389	0.565
HCM Control Delay	20	11.4	15.7
HCM Lane LOS	C	B	C
HCM 95th-tile Q	5.4	1.8	3.5

Intersection	
Intersection Delay, s/veh	23.4
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	150	7	16	291	195	300
Future Vol, veh/h	150	7	16	291	195	300
Peak Hour Factor	0.80	0.80	0.80	0.80	0.90	0.80
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	188	9	20	364	217	375
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	12.9	15.5	32
HCM LOS	B	C	D

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	96%	0%	39%
Vol Thru, %	4%	5%	0%
Vol Right, %	0%	95%	61%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	157	307	495
LT Vol	150	0	195
Through Vol	7	16	0
RT Vol	0	291	300
Lane Flow Rate	196	384	592
Geometry Grp	1	1	1
Degree of Util (X)	0.349	0.573	0.861
Departure Headway (Hd)	6.409	5.377	5.236
Convergence, Y/N	Yes	Yes	Yes
Cap	557	668	686
Service Time	4.499	3.454	3.292
HCM Lane V/C Ratio	0.352	0.575	0.863
HCM Control Delay	12.9	15.5	32
HCM Lane LOS	B	C	D
HCM 95th-tile Q	1.6	3.6	10

Intersection: 2: CR 335 & Bruce Rd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	93	77	71
Average Queue (ft)	53	35	41
95th Queue (ft)	81	59	63
Link Distance (ft)	341	457	337
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: CR 335 & Bruce Rd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	48	31	68
Average Queue (ft)	36	26	52
95th Queue (ft)	54	42	78
Link Distance (ft)	341	457	337
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: CR 335 & Bruce Rd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	124	80	64
Average Queue (ft)	63	38	38
95th Queue (ft)	103	62	58
Link Distance (ft)	341	457	337
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: CR 335 & Bruce Rd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	71	40	126
Average Queue (ft)	41	25	64
95th Queue (ft)	63	45	99
Link Distance (ft)	341	457	337
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: CR 335 & Bruce Rd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	138	101	98
Average Queue (ft)	70	48	55
95th Queue (ft)	119	78	84
Link Distance (ft)	341	457	337
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: CR 335 & Bruce Rd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	80	90	152
Average Queue (ft)	43	46	77
95th Queue (ft)	68	72	122
Link Distance (ft)	341	457	337
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: CR 335 & Bruce Rd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	155	106	127
Average Queue (ft)	75	51	68
95th Queue (ft)	130	83	106
Link Distance (ft)	341	457	337
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: CR 335 & Bruce Rd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	80	105	157
Average Queue (ft)	43	53	81
95th Queue (ft)	69	83	128
Link Distance (ft)	341	457	337
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Appendix D

January 2020 Traffic Counts / 2015 CDOT traffic data

Study Name	CR335 & I70 - Nutrient Farms
Start Date	Wednesday, January 29, 2020 7:00 AM
End Date	Thursday, January 30, 2020 6:15 PM
Site Code	

Report Summary - TWO DAY AVERAGE

		Southbound					Westbound					Eastbound					
Time Period	**Class.**	**R**	**L**	**U**	**I**	**O**	**R**	**T**	**U**	**I**	**O**	**T**	**L**	**U**	**I**	**O**	**Total**	
Peak 1	:les (no classi	118	21	0	142	275	73	3	0	75	23	2	200	0	201	120	418	
Specified Period	%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%	
7:00 AM - 9:15 AM	**Total**	**118**	**21**	**0**	**142**	**275**	**73**	**3**	**0**	**75**	**23**	**2**	**200**	**0**	**201**	**120**	**418**	417
One Hour Peak	PHF	0.78	0.77	0.38	0.8	0.78	0.73	0.63	0	0.73	0.72	0.38	0.79	0	0.79	0.79	0.86	
7:30 AM - 8:30 AM	Approach %				34%	66%				18%	6%				48%	29%		
7:15 AM - 8:15 AM																		
Peak 2	:les (no classi	208	76	0	284	157	37	3	0	39	78	2	120	0	122	210	445	
Specified Period	%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%	
4:00 PM - 6:15 PM	**Total**	**208**	**76**	**0**	**284**	**157**	**37**	**3**	**0**	**39**	**78**	**2**	**120**	**0**	**122**	**210**	**445**	446
One Hour Peak	PHF	0.87	0.71	0.13	0.86	0.8	0.83	0.38	0	0.86	0.73	0.38	0.77	0	0.77	0.87	0.93	
4:00 PM - 5:00 PM	Approach %				64%	35%				9%	18%				27%	47%		
5:00 PM - 6:00 PM																		

CR 355 - TOTAL TRIPS FOR 1/29/20 & 1/30/20 & 1/31/20

Wed 1/29/20		WB	EB		Thu 1/30/20		WB	EB		Fri 1/31/20		WB	EB	
Date	Time	Channel 1	Channel 2	TOTAL	Date	Time	Channel 1	Channel 2	TOTAL	Date	Time	Channel 1	Channel 2	TOTAL
1/29/2020	12:00 AM	0	0	0	1/30/2020	12:00 AM	0	1	1	1/31/2020	12:00 AM	0	0	0
1/29/2020	12:15 AM	0	0	0	1/30/2020	12:15 AM	0	0	0	1/31/2020	12:15 AM	0	0	0
1/29/2020	12:30 AM	0	0	0	1/30/2020	12:30 AM	0	1	1	1/31/2020	12:30 AM	0	1	1
1/29/2020	12:45 AM	0	0	0	1/30/2020	12:45 AM	0	0	0	1/31/2020	12:45 AM	0	0	0
1/29/2020	01:00 AM	0	0	0	1/30/2020	01:00 AM	0	0	0	1/31/2020	01:00 AM	0	0	0
1/29/2020	01:15 AM	1	0	1	1/30/2020	01:15 AM	0	0	0	1/31/2020	01:15 AM	0	0	0
1/29/2020	01:30 AM	0	0	0	1/30/2020	01:30 AM	0	0	0	1/31/2020	01:30 AM	0	0	0
1/29/2020	01:45 AM	0	1	1	1/30/2020	01:45 AM	0	0	0	1/31/2020	01:45 AM	0	0	0
1/29/2020	02:00 AM	0	0	0	1/30/2020	02:00 AM	0	0	0	1/31/2020	02:00 AM	0	0	0
1/29/2020	02:15 AM	0	0	0	1/30/2020	02:15 AM	0	0	0	1/31/2020	02:15 AM	0	0	0
1/29/2020	02:30 AM	0	0	0	1/30/2020	02:30 AM	0	0	0	1/31/2020	02:30 AM	0	0	0
1/29/2020	02:45 AM	0	0	0	1/30/2020	02:45 AM	0	0	0	1/31/2020	02:45 AM	0	0	0
1/29/2020	03:00 AM	0	1	1	1/30/2020	03:00 AM	0	0	0	1/31/2020	03:00 AM	0	0	0
1/29/2020	03:15 AM	0	0	0	1/30/2020	03:15 AM	0	0	0	1/31/2020	03:15 AM	0	0	0
1/29/2020	03:30 AM	1	0	1	1/30/2020	03:30 AM	1	0	1	1/31/2020	03:30 AM	0	0	0
1/29/2020	03:45 AM	0	0	0	1/30/2020	03:45 AM	0	0	0	1/31/2020	03:45 AM	1	0	1
1/29/2020	04:00 AM	0	0	0	1/30/2020	04:00 AM	0	0	0	1/31/2020	04:00 AM	0	0	0
1/29/2020	04:15 AM	0	0	0	1/30/2020	04:15 AM	0	0	0	1/31/2020	04:15 AM	0	0	0
1/29/2020	04:30 AM	1	0	1	1/30/2020	04:30 AM	2	0	2	1/31/2020	04:30 AM	2	0	2
1/29/2020	04:45 AM	3	1	4	1/30/2020	04:45 AM	2	0	2	1/31/2020	04:45 AM	0	0	0
1/29/2020	05:00 AM	2	0	2	1/30/2020	05:00 AM	3	0	3	1/31/2020	05:00 AM	2	0	2
1/29/2020	05:15 AM	1	0	1	1/30/2020	05:15 AM	1	0	1	1/31/2020	05:15 AM	1	0	1
1/29/2020	05:30 AM	2	0	2	1/30/2020	05:30 AM	3	0	3	1/31/2020	05:30 AM	1	1	2
1/29/2020	05:45 AM	1	2	3	1/30/2020	05:45 AM	1	2	3	1/31/2020	05:45 AM	1	0	1
1/29/2020	06:00 AM	6	0	6	1/30/2020	06:00 AM	2	2	4	1/31/2020	06:00 AM	2	1	3
1/29/2020	06:15 AM	8	1	9	1/30/2020	06:15 AM	11	2	13	1/31/2020	06:15 AM	6	0	6
1/29/2020	06:30 AM	7	2	9	1/30/2020	06:30 AM	5	0	5	1/31/2020	06:30 AM	2	0	2
1/29/2020	06:45 AM	5	1	6	1/30/2020	**06:45 AM**	**9**	**0**	**9**	1/31/2020	06:45 AM	5	1	6
1/29/2020	**07:00 AM**	**12**	**1**	**13**	1/30/2020	**07:00 AM**	**6**	**3**	**9**	1/31/2020	**07:00 AM**	**7**	**3**	**10**
1/29/2020	**07:15 AM**	**8**	**0**	**8**	1/30/2020	**07:15 AM**	**5**	**2**	**7**	1/31/2020	**07:15 AM**	**7**	**0**	**7**
1/29/2020	**07:30 AM**	**9**	**3**	**12**	1/30/2020	**07:30 AM**	**12**	**0**	**12**	1/31/2020	**07:30 AM**	**5**	**0**	**5**
1/29/2020	**07:45 AM**	**6**	**2**	**8**	1/30/2020	07:45 AM	6	0	6	1/31/2020	**07:45 AM**	**6**	**3**	**9**
1/29/2020	08:00 AM	10	3	13	1/30/2020	08:00 AM	4	5	9	1/31/2020	08:00 AM	3	1	4
1/29/2020	08:15 AM	6	1	7	1/30/2020	08:15 AM	5	2	7	1/31/2020	08:15 AM	5	2	7
1/29/2020	08:30 AM	2	0	2	1/30/2020	08:30 AM	6	0	6	1/31/2020	08:30 AM	4	1	5
1/29/2020	08:45 AM	1	1	2	1/30/2020	08:45 AM	2	1	3	1/31/2020	08:45 AM	2	0	2
1/29/2020	09:00 AM	4	2	6	1/30/2020	09:00 AM	3	1	4	1/31/2020	09:00 AM	2	0	2
1/29/2020	09:15 AM	2	2	4	1/30/2020	09:15 AM	1	2	3	1/31/2020	09:15 AM	5	2	7
1/29/2020	09:30 AM	4	2	6	1/30/2020	09:30 AM	4	3	7	1/31/2020	09:30 AM	3	1	4
1/29/2020	09:45 AM	4	3	7	1/30/2020	09:45 AM	5	1	6	1/31/2020	09:45 AM	1	2	3
1/29/2020	10:00 AM	4	2	6	1/30/2020	10:00 AM	5	5	10	1/31/2020	10:00 AM	3	4	7
1/29/2020	10:15 AM	4	2	6	1/30/2020	10:15 AM	1	4	5	1/31/2020	10:15 AM	4	2	6
1/29/2020	10:30 AM	3	2	5	1/30/2020	10:30 AM	2	0	2	1/31/2020	10:30 AM	1	3	4
1/29/2020	10:45 AM	3	1	4	1/30/2020	10:45 AM	1	2	3	1/31/2020	10:45 AM	3	1	4
1/29/2020	11:00 AM	3	4	7	1/30/2020	11:00 AM	2	3	5	1/31/2020	11:00 AM	3	2	5
1/29/2020	11:15 AM	6	1	7	1/30/2020	11:15 AM	8	4	12	1/31/2020	11:15 AM	4	0	4
1/29/2020	11:30 AM	5	4	9	1/30/2020	11:30 AM	2	1	3	1/31/2020	11:30 AM	2	1	3
1/29/2020	11:45 AM	5	5	10	1/30/2020	11:45 AM	3	3	6	1/31/2020	11:45 AM	5	2	7
1/29/2020	12:00 PM	4	6	10	1/30/2020	12:00 PM	4	4	8	1/31/2020	12:00 PM	3	2	5
1/29/2020	12:15 PM	0	1	1	1/30/2020	12:15 PM	3	4	7	1/31/2020	12:15 PM	4	2	6
1/29/2020	12:30 PM	2	1	3	1/30/2020	12:30 PM	2	7	9	1/31/2020	12:30 PM	4	4	8
1/29/2020	12:45 PM	2	2	4	1/30/2020	12:45 PM	5	1	6	1/31/2020	12:45 PM	3	2	5
1/29/2020	01:00 PM	3	3	6	1/30/2020	01:00 PM	3	2	5	1/31/2020	01:00 PM	1	7	8
1/29/2020	01:15 PM	5	2	7	1/30/2020	01:15 PM	3	4	7	1/31/2020	01:15 PM	3	5	8
1/29/2020	01:30 PM	2	7	9	1/30/2020	01:30 PM	3	7	10	1/31/2020	01:30 PM	3	1	4
1/29/2020	01:45 PM	4	3	7	1/30/2020	01:45 PM	5	2	7	1/31/2020	01:45 PM	3	2	5
1/29/2020	02:00 PM	4	2	6	1/30/2020	02:00 PM	4	1	5	1/31/2020	02:00 PM	4	1	5
1/29/2020	02:15 PM	0	2	2	1/30/2020	02:15 PM	6	3	9	1/31/2020	02:15 PM	3	4	7
1/29/2020	02:30 PM	5	3	8	1/30/2020	02:30 PM	3	3	6	1/31/2020	02:30 PM	1	2	3
1/29/2020	02:45 PM	1	5	6	1/30/2020	02:45 PM	5	9	14	1/31/2020	02:45 PM	3	2	5
1/29/2020	03:00 PM	7	8	15	1/30/2020	03:00 PM	4	2	6	1/31/2020	03:00 PM	2	1	3
1/29/2020	03:15 PM	5	2	7	1/30/2020	03:15 PM	3	3	6	1/31/2020	03:15 PM	4	5	9
1/29/2020	03:30 PM	5	9	14	1/30/2020	03:30 PM	5	3	8	1/31/2020	03:30 PM	4	4	8
1/29/2020	03:45 PM	4	2	6	1/30/2020	03:45 PM	4	4	8	1/31/2020	03:45 PM	2	6	8
1/29/2020	04:00 PM	2	9	11	1/30/2020	04:00 PM	4	4	8	1/31/2020	**04:00 PM**	**12**	**7**	**19**
1/29/2020	04:15 PM	4	6	10	1/30/2020	04:15 PM	3	5	8	1/31/2020	**04:15 PM**	**3**	**8**	**11**
1/29/2020	04:30 PM	3	6	9	1/30/2020	04:30 PM	4	11	15	1/31/2020	**04:30 PM**	**6**	**5**	**11**
1/29/2020	04:45 PM	7	7	14	1/30/2020	04:45 PM	5	6	11	1/31/2020	**04:45 PM**	**1**	**8**	**9**
1/29/2020	**05:00 PM**	**2**	**10**	**12**	1/30/2020	05:00 PM	0	5	5	1/31/2020	05:00 PM	5	6	11
1/29/2020	**05:15 PM**	**3**	**6**	**9**	1/30/2020	05:15 PM	2	4	6	1/31/2020	05:15 PM	2	13	15
1/29/2020	**05:30 PM**	**2**	**8**	**10**	1/30/2020	**05:30 PM**	**2**	**6**	**8**	1/31/2020	05:30 PM	4	3	7
1/29/2020	**05:45 PM**	**6**	**9**	**15**	1/30/2020	**05:45 PM**	**2**	**13**	**15**	1/31/2020	05:45 PM	2	5	7
1/29/2020	06:00 PM	0	6	6	1/30/2020	**06:00 PM**	**2**	**6**	**8**	1/31/2020	06:00 PM	0	6	6
1/29/2020	06:15 PM	2	9	11	1/30/2020	**06:15 PM**	**4**	**4**	**8**	1/31/2020	06:15 PM	1	2	3
1/29/2020	06:30 PM	0	2	2	1/30/2020	06:30 PM	1	4	5	1/31/2020	06:30 PM	3	6	9
1/29/2020	06:45 PM	1	1	2	1/30/2020	06:45 PM	2	5	7	1/31/2020	06:45 PM	3	2	5
1/29/2020	07:00 PM	0	4	4	1/30/2020	07:00 PM	2	2	4	1/31/2020	07:00 PM	0	5	5
1/29/2020	07:15 PM	0	6	6	1/30/2020	07:15 PM	3	4	7	1/31/2020	07:15 PM	0	4	4
1/29/2020	07:30 PM	1	3	4	1/30/2020	07:30 PM	1	2	3	1/31/2020	07:30 PM	3	1	4
1/29/2020	07:45 PM	2	0	2	1/30/2020	07:45 PM	4	1	5	1/31/2020	07:45 PM	2	6	8
1/29/2020	08:00 PM	2	4	6	1/30/2020	08:00 PM	1	2	3	1/31/2020	08:00 PM	2	2	4
1/29/2020	08:15 PM	2	1	3	1/30/2020	08:15 PM	3	0	3	1/31/2020	08:15 PM	5	1	6
1/29/2020	08:30 PM	1	2	3	1/30/2020	08:30 PM	1	3	4	1/31/2020	08:30 PM	0	2	2
1/29/2020	08:45 PM	1	2	3	1/30/2020	08:45 PM	1	1	2	1/31/2020	08:45 PM	2	0	2
1/29/2020	09:00 PM	1	3	4	1/30/2020	09:00 PM	3	6	9	1/31/2020	09:00 PM	0	0	0
1/29/2020	09:15 PM	1	3	4	1/30/2020	09:15 PM	2	0	2	1/31/2020	09:15 PM	0	2	2
1/29/2020	09:30 PM	1	2	3	1/30/2020	09:30 PM	0	3	3	1/31/2020	09:30 PM	1	2	3
1/29/2020	09:45 PM	0	2	2	1/30/2020	09:45 PM	0	0	0	1/31/2020	09:45 PM	1	2	3
1/29/2020	10:00 PM	3	0	3	1/30/2020	10:00 PM	0	1	1	1/31/2020	10:00 PM	1	3	4
1/29/2020	10:15 PM	2	1	3	1/30/2020	10:15 PM	0	1	1	1/31/2020	10:15 PM	1	1	2
1/29/2020	10:30 PM	2	1	3	1/30/2020	10:30 PM	1	0	1	1/31/2020	10:30 PM	0	2	2
1/29/2020	10:45 PM	1	0	1	1/30/2020	10:45 PM	0	0	0	1/31/2020	10:45 PM	0	3	3
1/29/2020	11:00 PM	0	2	2	1/30/2020	11:00 PM	0	2	2	1/31/2020	11:00 PM	0	0	0
1/29/2020	11:15 PM	2	0	2	1/30/2020	11:15 PM	0	1	1	1/31/2020	11:15 PM	1	1	2
1/29/2020	11:30 PM	0	0	0	1/30/2020	11:30 PM	0	1	1	1/31/2020	11:30 PM	0	0	0
1/29/2020	11:45 PM	0	0	0	1/30/2020	11:45 PM	0	0	0	1/31/2020	11:45 PM	0	0	0
		246	223	469			238	212	450			206	192	398

2025 (expected year of construction) *Directional* ADT

2040 *Directional* Growth Factors

2025 *Directional* Percent Single Trucks

			2015				2025				2015 to 2025		2040				2025 to 2040	
	2015 ADT	Movement	AM	PM	AM % HV	PM % HV	AM	PM	AM % HV	PM % HV	Growth Factor	2025 ADT	AM	PM	AM % HV	PM % HV	Growth Factor	2040 ADT
		Left	90	95	2	0	116	126	2	0			149	164	0	0		
		Thru	1	2	2	2	1	2	2	2			1	3	2	2		
I-70 EB Off Ramp	1413	Right	41	34	2	0	52	42	2	0	1.29	1821	67	54	0	0	1.29	2353
		Total vph / Wtd avg % HV	132	131	2.0	0.0	169	170	2.0	0.0			217	221	0.0	0.0		
		LT from N Spur leg	584	128	2	2	758	160	2	2			987	204	2	2		
I-70 EB On Ramp	4069	T from I-70 EB Off Ramp	1	2	2	2	1	2	2	2	1.29	5239	1	3	2	2	1.30	6786
		RT from S Spur leg	126	32	2	2	161	42	2	2			206	55	2	2		
		Total	711	162	2.0	2.0	920	204	2.0	2.0			1194	262	2.0	2.0		
		Left	19	80	2	2	25	105	2	2			31	131	2	2		
I-70 EB ramp SB to CR 335	2513	Right	129	192	2	2	167	252	2	2	1.31	3285	211	314	2	2	1.25	4111
		Total	148	272	2.0	2.0	192	357	2.0	2.0			242	445	2.0	2.0		
		Thru	183	129	2	2	241	174	2	2			317	228	2	2		
CR 335 NB to I-70 EB Ramp	2454	Right	126	32	2	2	161	42	2	2	1.31	3227	206	55	2	2	1.30	4208
		Total	309	161	2.0	2.0	402	216	2.0	2.0			523	283	2.0	2.0		
		Left	28	29	2	2	34	36	2	2			44	46	2	2		
I-70 EB ramp NB to I-70 WB ramp		Thru	257	205	2	2	323	264	2	2	1.27	0	442	346	2	2	1.34	0
		Total	285	234	2.0	2.0	357	300	2.0	2.0			486	392	2.0	2.0		
		Left	584	128	2	2	758	160	2	2			987	204	2	2		
I-70 WB ramp SB to I-70 EB ramp		Thru	106	251	2	2	140	315	2	2	1.28	0	185	412	2	2	1.30	0
		Total	690	379	2.0	2.0	898	475	2.0	2.0			1172	616	2.0	2.0		
		LT from S Spur leg	584	128	2	2	758	160	2	2			987	204	2	2		
I-70 WB On Ramp	1737	T from I-70 WB Off Ramp	0	2	2	2	0	2	2	2	1.28	2225	0	3	2	2	1.30	2883
		RT from N Spur leg	89	108	2	2	111	136	2	2			142	176	2	2		
		Total	673	238	2.0	2.0	869	298	2.0	2.0			1129	383	2.0	2.0		
		Left	18	111	2	2	22	139	2	2			28	176	2	2		
I-70 WB Off Ramp	3559	Thru	0	2	2	2	0	2	2	2	1.26	4494	0	3	2	2	1.29	5783
		Right	73	481	2	2	91	611	2	2			117	789	2	2		
		Total	91	594	2.0	2.0	113	752	2.0	2.0			145	968	2.0	2.0		
		Left	71	210	5	5	90	261	5	5			113	327	5	5		
I-70 WB ramp NB to US 6	5799	Thru	214	424	2	2	284	557	2	2	1.30	7566	371	729	2	2	1.30	9825
		Right	28	41	5	5	40	57	5	5			55	79	5	5		
			313	675	2.9	3.1	414	875	2.9	3.1			539	1135	2.9	3.1		
		Thru	698	260	2	2	876	336	2	2			1144	440	2	2		
US 6 SB to I-70 WB ramp	5639	Right	89	108	2	2	111	136	2	2	1.26	7123	142	176	2	2	1.30	9286
		Total	787	368	2.0	2.0	987	472	2.0	2.0			1286	616	2.0	2.0		
		Left	54	63	2	2	66	77	2	2			81	95	2	2		
US 6 EB W/O Spur	2330	Thru	43	29	5	5	53	36	5	5	1.23	2877	69	47	5	5	1.26	3614
		Right	257	91	5	5	320	111	5	5			403	138	5	5		
		Total	354	183	4.5	4.0	439	224	4.5	4.0			553	280	4.6	4.0		
		LT from S Spur leg	71	210	5	5	90	261	5	5			113	327	5	5		
US 6 WB W/O Spur	2362	T from US 6	15	107	5	5	19	134	5	5	1.24	2929	24	174	5	5	1.26	3678
		RT from N Spur leg	60	79	2	2	73	95	2	2			89	117	2	2		
		Total	146	396	3.8	4.4	182	490	3.8	4.4			226	618	3.8	4.4		
		LT from N Spur leg	46	16	2	2	62	22	2	2			84	30	2	2		
US 6 EB E/O Spur	954	T from US 6	43	29	5	5	53	36	5	5	1.33	1269	69	47	5	5	1.35	1711
		RT from S Spur leg	28	41	5	5	40	57	5	5			55	79	5	5		
		Total	117	86	3.8	4.4	155	115	3.8	4.4			208	156	3.8	4.4		
		Left	16	94	5	5	35	81	5	5			49	111	5	5		
US 6 WB E/O Spur	1001	Thru	15	107	5	5	19	134	5	5	1.33	1330	24	174	5	5	1.34	1780
		Right	25	59	2	2	22	129	2	2			28	176	2	2		
		Total	56	260	3.7	4.3	76	344	4.1	3.9			101	461	4.2	3.9		
		Left	61	58	2	2	80	76	2	2			99	95	2	2		
US 6 NB to New Castle Plaza Access	4842	Thru	163	361	2	2	213	474	2	2	1.31	6353	267	591	2	2	1.26	8032
		Right	60	162	2	2	79	213	2	2			98	285	2	2		
		Total	284	581	2.0	2.0	372	763	2.0	2.0			464	971	2.0	2.0		
		Left	46	16	2	2	62	22	2	2			84	30	2	2		
New Castle Plaza Access SB to US 6	4925	Thru	485	216	2	2	632	280	2	2	1.29	6356	834	367	2	2	1.31	8305
		Right	60	79	2	2	73	95	2	2			89	117	2	2		
		Total	591	311	2.0	2.0	767	397	2.0	2.0			1007	514	2.0	2.0		
		Left	24	28	2	2	30	35	2	2			39	46	2	2		
New Castle Plaza Access EB W/O Spur		Thru	7	7	2	2	9	9	2	2	1.29	0	11	11	2	2	1.26	0
		Right	47	38	2	2	63	49	2	2			77	62	2	2		
		Total	78	73	2.0	2.0	102	93	2.0	2.0			127	119	2.0	2.0		
		LT from S Spur leg	61	58	2	2	80	76	2	2			99	95	2	2		
New Castle Plaza Access WB W/O Spur		T from New Castle	10	24	2	2	12	30	2	2	1.31	0	16	39	2	2	1.24	0
		RT from N Spur leg	53	18	2	2	66	29	2	2			86	29	2	2		
		Total	124	100	2.0	2.0	158	135	2.0	2.0			201	163	2.0	2.0		
		LT from N Spur leg	24	51	2	2	30	64	2	2			39	83	2	2		
New Castle Plaza Access EB E/O Spur		T from New Castle	7	7	2	2	9	9	2	2	1.30	0	11	11	2	2	1.30	0
		RT from S Spur leg	60	162	2	2	79	213	2	2			98	285	2	2		
		Total	91	220	2.0	2.0	118	286	2.0	2.0			148	379	2.0	2.0		
		Left	16	115	2	2	21	147	2	2			26	187	2	2		
New Castle Plaza Access WB E/O Spur		Thru	10	24	2	2	12	30	2	2	0.89	0	16	39	2	2	1.83	0
		Right	13	89	2	2	16	11	2	2			21	145	2	2		
		Total	39	228	2.0	2.0	49	188	2.0	2.0			63	371	2.0	2.0		
		Left	24	51	2	2	30	64	2	2			39	83	2	2		
Castle Valley SB to New Castle Plaza Access		Thru	512	158	2	2	683	201	2	2	1.31	0	838	258	2	2	1.24	0
		Right	53	18	2	2	66	29	2	2			86	29	2	2		
		Total	589	227	2.0	2.0	779	294	2.0	2.0			963	370	2.0	2.0		
		LT from New Castle	24	28	2	2	30	35	2	2			39	46	2	2		
Castle Valley NB to X		T from S Spur leg	163	361	2	2	213	474	2	2	1.15	0	267	591	2	2	1.42	0
		RT from New Castle	13	89	2	2	16	11	2	2			21	145	2	2		
		Total	200	478	2.0	2.0	259	520	2.0	2.0			327	782	2.0	2.0		
		Left	23	127			28	159					37	208				
CR 335 EB W/O Spur	1379	Thru	0	1			2	1			1.14	1572	0	1			1.29	2035
		Total	23	128	0.0	0.0	30	160	0.0	0.0			37	209	0.0	0.0		
		Thru	2	3			4	4					3	4				
CR 335 WB E/O Spur	2820	Right	222	45			120	57			0.78	2200	363	74			2.40	5279
		Total	224	48	0.0	0.0	124	61	0.0	0.0			366	78	0.0	0.0		
		T from CR 335	2	3	0	0	4	4	0	0			3	4	0	0		
CR 335 WB W/O Spur	1383	RT from Spur	129	192	2	2	167	252	2	2	1.17	1611	211	314	2	2	1.25	2007
		Total	131	195	2.0	2.0	171	256	2.0	2.0			214	318	2.0	2.0		
		LT from N Spur leg	19	80	0	0	25	105	0	0			31	131	0	0		
CR 335 EB E/O Spur	2849	T from CR 335	0	1	2	2	2	1	2	2	1.18	3348	0	1	2	2	1.23	4103
		Total	19	81	0.0	0.0	27	106	0.1	0.0			31	132	0.0	0.0		

Appendix E

Trip Generation, Reduction, Distribution, Assignment Worksheet

Nutrient Farm - Trip Generation
ITE Trip Generation, 10th Edition

Land Use Type	Number of Units	Unit	ITE Code	Design Hour Rates: Daily Design Rate	AM Rate	AM Entering	AM Exiting	PM Rate	PM Entering	PM Exiting
Single Family Detached	19	Dwelling	210	11.89	0.96	0.24	0.72	1.09	0.68	0.40
ADU (MF, Low-rise)	20	Dwelling	220	5.50	0.52	0.12	0.40	0.71	0.44	0.26
Warehousing	140	ksf	150	1.91	0.30	0.23	0.07	0.32	0.09	0.23
General Office Building	15	ksf	710	11.20	2.71	2.33	0.38	1.00	0.16	0.84
Retail	2	ksf	820	37.75	2.13	1.32	0.81	15.03	7.21	7.81
Supermarket (Farm Sales)	4	ksf	850	106.78	3.82	2.29	1.53	9.24	4.71	4.53
Restaurant	7.5	ksf	932	112.18	9.94	5.47	4.47	9.77	6.06	3.71
Camp / RV / Cabin	67	spaces	*	2.36	0.26	0.14	0.12	0.25	0.16	0.09
Adventure Farm, Off-Road Park, Water Park	193	visitors	**	1.33	0.13	0.09	0.03	0.13	0.06	0.07
Performing Arts	100	visitors	**	1.33	0.00	0.00	0.00	0.50	0.05	0.45
Retreat	12	rooms	***	2.00	0.50	0.45	0.05	0.50	0.05	0.45
Music Festival	350	visitors	****	1.00	0.00	0.00	0.00	0.33	0.03	0.30

Land Use Type	Weekday Design Hour Traffic: Design Traffic	AM IN	AM OUT	PM IN	PM OUT	Trip Reduction (Internal Capture Rates): AM IN	AM OUT	PM IN	PM OUT	Design Hour Volumes: AM IN	AM OUT	PM IN	PM OUT
Single Family Detached	226	5	14	13	8	9%	24%	58%	45%	5	11	5	4
ADU (MF, Low-rise)	110	2	8	9	5	9%	24%	58%	45%	2	6	4	3
Warehousing	267	32	10	12	33	22%	88%	36%	11%	25	1	8	29
General Office Building	168	35	6	2	13	22%	88%	36%	11%	27	1	1	12
Retail	76	3	2	14	16	41%	42%	66%	65%	2	1	5	6
Supermarket (Farm Sales)	427	9	6	19	18	41%	42%	66%	65%	5	3	6	6
Restaurant	841	41	34	45	28	33%	19%	30%	68%	27	28	32	9
Camp / RV / Cabin	158	17	10	8	17	5%	23%	44%	14%	16	8	4	15
Adventure Farm, Off-Road Park, Water Park	257	17	6	12	26	0%	0%	14%	3%	17	6	10	25
Performing Arts	133	0	0	5	45	0%	0%	14%	3%	0	0	4	44
Retreat	24	5	1	1	5	5%	23%	44%	14%	5	1	1	4
Music Festival	350	0	0	12	104	0%	0%	14%	3%	0	0	10	101
TOTAL TRIPS:	**3,037**	**166**	**97**	**152**	**318**					**131**	**66**	**90**	**258**
TOTAL TRIPS less MUSIC FEST:	**2,687**	**166**	**97**	**140**	**214**	**617**				**131**	**66**	**80**	**157**

Land Use Type	Road Impact Fee: Unit Fee	Total Fee	
Single Family Detached	$ 1,332	$ 25,308	
ADU (MF, Low-rise)	$ 986	$ 19,720	
Warehousing	$ 379	$ 53,060	
General Office Building	$ 1,092	$ 16,380	
Retail	$ 2,523	$ 5,046	
Supermarket (Farm Sales)	$ 2,523	$ 10,092	
Restaurant	$ 2,523	$ 18,923	
Camp / RV / Cabin	$ 486	$ 32,562	
Adventure Farm, Off-Road Park, Water Park	$ 2,523	$ 18,166	7.2 ksf
Performing Arts	$ 2,523	$ 12,615	5 ksf
Retreat	$ 486	$ 5,832	12 rooms
Music Festival		$ -	
TOTAL TRIPS:		$ 217,703	
TOTAL TRIPS less MUSIC FEST:	**434**	**1,890**	
		30%	**OVERALL DAILY TRIP REDUCTION**

Road Impact Fee

Residential Unit	Fee	Industrial (per 1000 sf)	Commerical (per 1000 sf)	Institutional (per 1000 sf)	ffice & Oth per 1000 sf
< 900	$ 486	$ 379	$ 2,523	$ 1,008	$ 1,092
901 - 1400	$ 986				
1401 - 1900	$ 1,332				
1401 - 1900	$ 1,332				
1901 - 2400	$ 1,598				
> 2400	$ 1,811				

	Weekday Design Hour Traffic: AM IN	AM OUT	PM IN	PM OUT	Design Hour Volumes: AM IN	AM OUT	PM IN	PM OUT
Office /Warehouse	**67**	**16**	**14**	**46**	**52**	**2**	**9**	**41**
Retail / Supermarket	**12**	**8**	**33**	**34**	**7**	**4**	**11**	**12**
Entertainment	**17**	**6**	**29**	**175**	**17**	**6**	**24**	**170**

South Access to main camping, cabins, water, retreat, perf arts

AM IN	AM OUT	PM IN	PM OUT
38	15	19	88

Appendix F

Combined Scenario Results – MOE's by Movement

All-way STOP			2022 BASELINE TRAFFIC					2042 BACKGROUND TRAFFIC					2042 TOTAL TRAFFIC (less Music)					2042 TOTAL TRAFFIC (with Music)				
Approach Movement			*Overall LOS*	*Overall Delay*	LOS	Delay	95th Q	*Overall LOS*	*Overall Delay*	LOS	Delay	95th Q	*Overall LOS*	*Overall Delay*	LOS	Delay	95th Q	*Overall LOS*	*Overall Delay*	LOS	Delay	95th Q
CR 335 / Bruce Road	EB	AM	*A*	*9.1*	B	10.1	81	*B*	*12.0*	B	14.4	103	*C*	*16.4*	C	20.0	119	*C*	*16.4*	C	20.0	119
		PM	*A*	*9.9*	A	9.6	54	*B*	*11.8*	B	10.4	63	*C*	*18.3*	B	12.1	68	*C*	*23.4*	B	12.9	69
	WB	AM			A	7.6	59			A	8.7	62			B	11.4	78			B	11.4	78
		PM			A	7.8	42			A	8.2	45			B	11.4	72			C	15.5	83
	SB	AM			A	8.5	63			A	9.8	58			C	15.7	84			C	15.7	84
		PM			B	10.4	78			B	12.8	99			D	23.5	122			D	31.9	128

Unsignalized Intersections

Level of Service	**Delay (seconds)**
A (Highly Desirable)	< 10.0
B (Desirable)	10.1 to 15
C (Acceptable)	15.1 to 25
D (Acceptable in Urban Areas)	25.1 to 35
E (Unacceptable)	35.1 to 50
F (Unacceptable)	> 50.0

Source: Highway Capacity Manual, 2010

Appendix G

Trip Generation and Internal Capture Background Data

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Nutrient farm	**Organization:**	SGM
Project Location:	CR 335 Garfield County	**Performed By:**	DJC
Scenario Description:		**Date:**	
Analysis Year:	2042	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office / Warehousing	750 / 150	155	ksf	83	67	16
Retail / Supermarket	820 / 850	6	ksf	20	12	8
Restaurant	932	8	ksf	75	41	34
Entertainment (Adventure, Off-Road, Water Park, Perf Arts, Retreat, Music)				25	17	8
Residential	220	39	dwelling	29	7	22
Camping / RV / Retreat	*	79	spaces / rooms	33	22	11
All Other Land Uses				0		
Total				265	166	99

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office / Warehousing	1.00			1.00		
Retail / Supermarket	1.50			1.50		
Restaurant	2.00			2.00		
Entertainment (Adventure, Off-F	1.50			1.50		
Residential	1.50			1.50		
Camping / RV	2.00			2.00		
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Entertainment	Residential	Camping / RV
Office / Warehousing		1000	1000	1000	1500	1500
Retail / Supermarket	1000		1000	1500	1000	1000
Restaurant	1000	1000		1500	1000	2000
Entertainment	1000	1500	1500		2000	1000
Residential	1500	1000	1000	2000		2000
Camping / RV	1500	1000	2000	1000	2000	

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Entertainment	Residential	Camping / RV
Office / Warehousing		4	10	0	0	0
Retail / Supermarket	3		2	0	0	0
Restaurant	9	1		0	1	2
Entertainment	0	0	0		0	0
Residential	1	0	7	0		0
Camping / RV	2	1	2	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	411	248	163
Internal Capture Percentage	22%	18%	28%
External Vehicle-Trips[3]	205	136	69
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office / Warehousing	22%	88%
Retail / Supermarket	33%	42%
Restaurant	26%	19%
Entertainment	0%	0%
Residential	9%	24%
Camping / RV	5%	23%

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Nutrient farm
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office / Warehousing	1.00	67	67	1.00	16	16
Retail / Supermarket	1.50	12	18	1.50	8	12
Restaurant	2.00	41	82	2.00	34	68
Entertainment (Adventure, Off-	1.50	17	26	1.50	8	12
Residential	1.50	7	11	1.50	22	33
Camping / RV	2.00	22	44	2.00	11	22

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office / Warehousing		4	10	0	0	0
Retail / Supermarket	3		2	0	2	0
Restaurant	21	10		0	3	2
Entertainment (Adventure, Off-	0	0	0		0	0
Residential	1	0	7	0		0
Camping / RV	17	3	2	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office / Warehousing		6	19	0	0	0
Retail / Supermarket	3		41	0	0	0
Restaurant	9	1		0	1	2
Entertainment (Adventure, Off-	0	0	0		0	0
Residential	2	3	16	0		0
Camping / RV	2	1	5	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office / Warehousing	15	52	67	52	0	0
Retail / Supermarket	6	12	18	8	0	0
Restaurant	21	61	82	31	0	0
Entertainment (Adventure, Off-	0	26	26	17	0	0
Residential	1	10	11	7	0	0
Camping / RV	2	42	44	21	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office / Warehousing	14	2	16	2	0	0
Retail / Supermarket	5	7	12	5	0	0
Restaurant	13	55	68	28	0	0
Entertainment (Adventure, Off-	0	12	12	8	0	0
Residential	8	25	33	17	0	0
Camping / RV	5	17	22	9	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Nutrient farm	**Organization:**	SGM
Project Location:	CR 335 Garfield County	**Performed By:**	DJC
Scenario Description:		**Date:**	
Analysis Year:	2042	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office / Warehousing	750 / 150	155	ksf	60	14	46
Retail / Supermarket	820 / 850	6	ksf	67	33	34
Restaurant	932	7.5	ksf	73	45	28
Entertainment (Adventure, Off-Road, Water Park, Perf Arts, Retreat, Music)				204	29	175
Residential	220	39	dwelling	35	22	13
Camping / RV / Retreat	*	79	spaces / rooms	31	9	22
All Other Land Uses				0		
Total				470	152	318

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office / Warehousing	1.00			1.00		
Retail / Supermarket	1.50			1.50		
Restaurant	2.00			2.00		
Entertainment (Adventure, Off-F	1.50			1.50		
Residential	1.50			1.50		
Camping / RV	2.00			2.00		
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Entertainment	Residential	Camping / RV
Office / Warehousing		1000	1000	1000	1500	1500
Retail / Supermarket	1000		1000	1500	1000	1000
Restaurant	1000	1000		1500	1000	2000
Entertainment	1000	1500	1500		2000	1000
Residential	1500	1000	1000	2000		2000
Camping / RV	1500	1000	2000	1000	2000	

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Entertainment	Residential	Camping / RV
Office / Warehousing		3	1	0	1	0
Retail / Supermarket	1		15	2	12	3
Restaurant	2	23		4	5	4
Entertainment	1	2	3		1	0
Residential	1	4	3	0		1
Camping / RV	0	1	5	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	729	249	480
Internal Capture Percentage	27%	39%	20%
External Vehicle-Trips[3]	350	91	259
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office / Warehousing	36%	11%
Retail / Supermarket	66%	65%
Restaurant	30%	68%
Entertainment	14%	3%
Residential	58%	45%
Camping / RV	44%	14%

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Nutrient farm
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office / Warehousing	1.00	14	14	1.00	46	46
Retail / Supermarket	1.50	33	50	1.50	34	51
Restaurant	2.00	45	90	2.00	28	56
Entertainment (Adventure, Off-F	1.50	29	44	1.50	175	263
Residential	1.50	22	33	1.50	13	20
Camping / RV	2.00	9	18	2.00	22	44

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office / Warehousing		7	1	0	1	0
Retail / Supermarket	1		15	2	12	3
Restaurant	2	23		4	9	4
Entertainment (Adventure, Off-F	5	55	82		13	5
Residential	1	6	3	0		1
Camping / RV	0	7	30	0	1	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office / Warehousing		3	1	0	1	0
Retail / Supermarket	4		26	11	15	3
Restaurant	4	25		14	5	13
Entertainment (Adventure, Off-F	1	2	3		1	0
Residential	8	4	10	0		2
Camping / RV	0	1	5	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office / Warehousing	5	9	14	9	0	0
Retail / Supermarket	33	17	50	11	0	0
Restaurant	27	63	90	32	0	0
Entertainment (Adventure, Off-F	6	38	44	25	0	0
Residential	19	14	33	9	0	0
Camping / RV	8	10	18	5	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office / Warehousing	5	41	46	41	0	0
Retail / Supermarket	33	18	51	12	0	0
Restaurant	38	18	56	9	0	0
Entertainment (Adventure, Off-F	7	256	263	171	0	0
Residential	9	11	20	7	0	0
Camping / RV	6	38	44	19	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.