

The Facts About Project Taurus

A document-by-document look at the Garden of the Gods Road data center

Presented by Tom Carter

Father · Husband · Teacher · Engineer · Veteran

Who are you?

BACKGROUND

- Network, system, and infrastructure engineer; consulting engineer for communications service providers
- Built data center power & cooling — a 4 MW lab data center, and a ground-network data center in Antarctica for the Joint Polar Satellite System (JPSS). Cable-industry wireless comms.
- Two patents for MAP-T, an IPv4 → IPv6 transition technology
- U.S. Army — 19K (armor crewman) & 25B (information systems operator); left in 2014 as a Signal NCO. Voice, data, microwave, satellite.
- Taught basic electronics & industrial automation @ PPSC
- Designed my own 9.6 kW solar system. Array design, wiring plans, permitting. Within 3% of planned production after 6 years.



THIS IS INDEPENDENT WORK

- **My own analysis, as a private citizen, on my own time.**
- From public records only, no insider access.
- I have been a UPAC Alternate since 2024, but our assignments there have been nuclear and geothermal generation, not data centers.
- This presentation has nothing to do with UPAC, was not requested by it, and is not endorsed by UPAC, CSU, or the City.
- The conclusions are mine alone.



What this is, and what it isn't

- **IS: an objective walk through the public record: permits, engineering plans, the noise study, CSU filings, state law.**
- **ISN'T: an anti-data-center or anti-development argument.**
- **ISN'T: a pro-data-center or pro-development argument.**
- The case for the project was made by former Mayor Suthers, Gen. Hyten, and the Gazette editorial board on AI, defense, and economic grounds.

Agenda

- BLUF: Concerns and Questions
- Site history
- What is being proposed?
- Electrical Impact
- Water Impact
- Noise Impact
- Heat Impact
- Environmental Impact
- The economics
- Open asks



Bottom line up front

What the record establishes, and what remains open. Drawn from public filings, the applicant's materials, and CSU's responses.

WHAT WE KNOW

- A 50 MW critical (~70 MW gross) data center in the existing building; unlikely to expand within 3 years
- Air-cooled (Vera Rubin, ~113°F supply); near-zero on-site water;
- Backup power is 30 Tier 4 diesel generators, state air-permitted, with contained fuel.
- The economic-development incentive (EDSC) was denied; CSU confirms no contract rate.
- CSU electrical revenue is ~\$34M/yr at 50 MW under the ratepayer-protected ELL tariff.
- City use tax (3.07%) applies to the equipment; county and transit-district use tax do not.
- Modeled noise like complies with the A-weighted city ordinance (~45 dBA, under the 50 dB night limit).

WHAT WE DON'T KNOW

- What scale will the facility operate in 5 or 10 years?
- Low-frequency noise: the applicant's model shows 61 dBC (a 16–21 dB C-minus-A gap); it has not been measured C-weighted or assessed under ISO 1996.
- How the 50 MW will actually be served: no service agreement (LLSA) or PPA is in place, and the public accounts of the power source differ.
- Whether the load study behind “no upgrades needed” was prepared for Raeden or the prior owner.
- What percentage of hardware will be subject to use-tax.
- The permanent job count — filings and public statements differ (~20 vs 60–100).
- Whether Raeden will commit to a binding community benefit agreement.
- The thermal impact: no plume or microclimate study exists for the continuous ~55–70 MW of heat rejection.

Method & sources

- **Primary records:**
- Permit DEPN-26-0039 · mechanical plan sheet M201 · acoustic study DLAA 26-024 Rev. C · Hankard (HEI) validation 6/1/26
- Raeden's CSU large-load submission (CORA) · CSU 2026 rate case & Large Load (ELL) tariff · HB26-1030
- Fountain Creek Watershed District · the six filed appeals (five accepted) · press of record

EVERY SLIDE IS TAGGED BY CERTAINTY:

DOCUMENTED

ANALYSIS

OPEN QUESTION

documented = on paper · analysis = math from the documents · open question = raised, not answered

This is not an empty lot, it was previously an Intel fab

- 1996: Rockwell builds the shell
- 1997 - 1998: Houses along Chutney Ct and northwestern Chelsea Green are built
- 1998: Rockwell downsizes from Colorado Springs, leaving empty shell
- 2000: Intel completes the “Power Center”, an 8-inch wafer fab with ~120k sq ft of cleanroom
- ~2009: Intel exits the site in a corporate downsizing
- Originally zoned PIP-1 (Planned Industrial Park); ~30.9-acre campus



~\$4B

Intel's investment in
the fab

~100
MW

Intel-era power rating

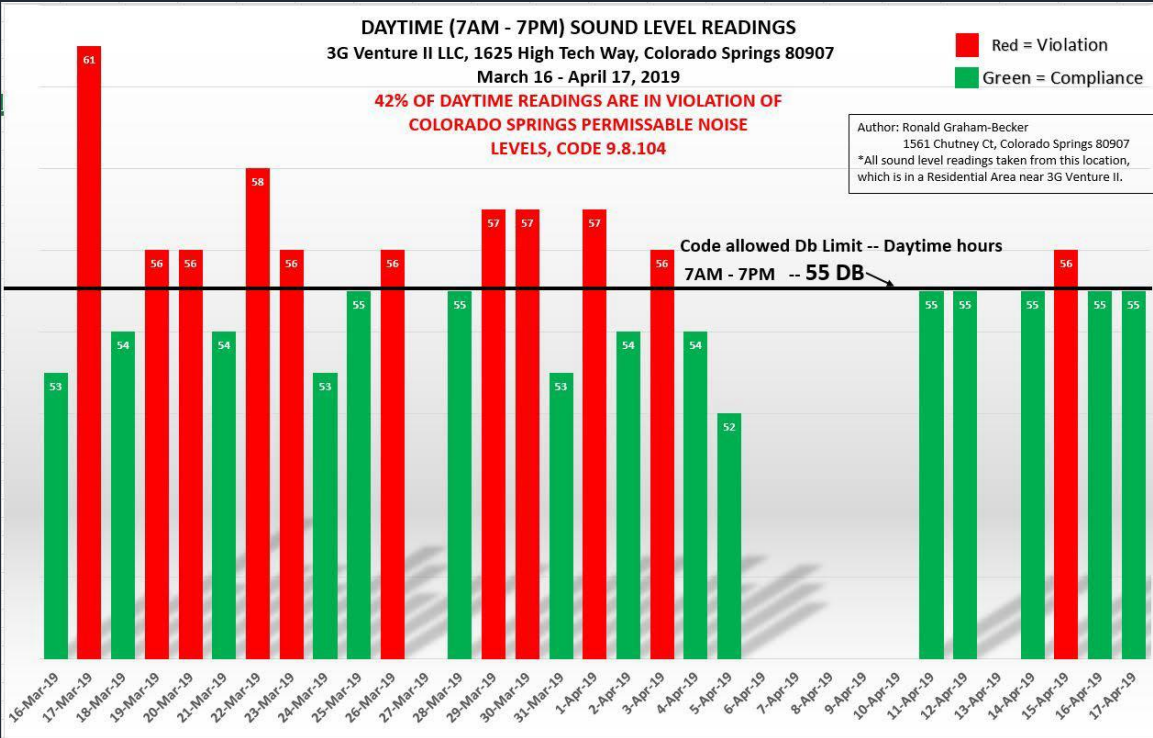
The crypto-mining era

- 2018: 3G Venture (owner John Chen) buys ~half the complex (~\$13M) for Bitcoin mining: ~85,000 sq ft of rigs.
- Cooled thousands of rigs with rooftop / outdoor fan, 24/7. Neighbors complain they couldn't hold a conversation outside.
- City measurements (2019): ~48–50.5 dB, at or over the 50 dB residential night limit. Complaints continued through 2022.
- A wall of shipping containers was the mitigation. Neighbors say minimal improvement
- 3G filed Chapter 11 bankruptcy (Dec 2020); it is still the listed owner. Raeden is buying the building from 3G.

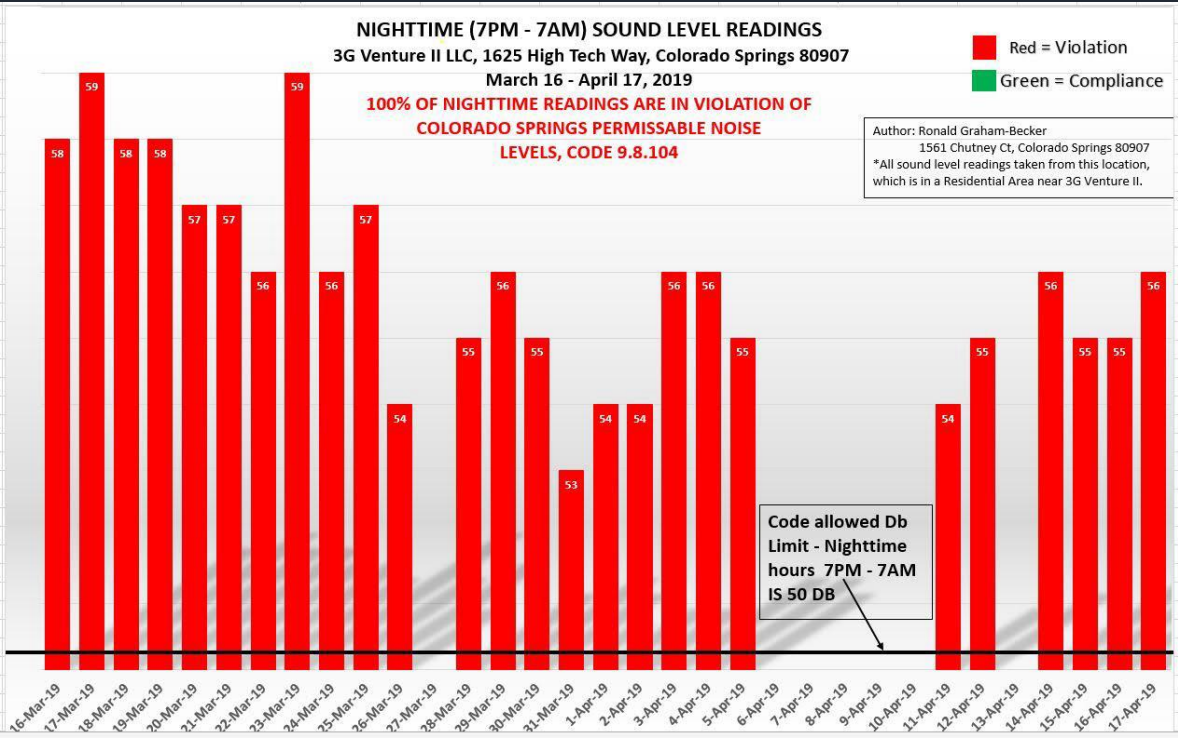


The crypto-mining era noise levels

Daytime



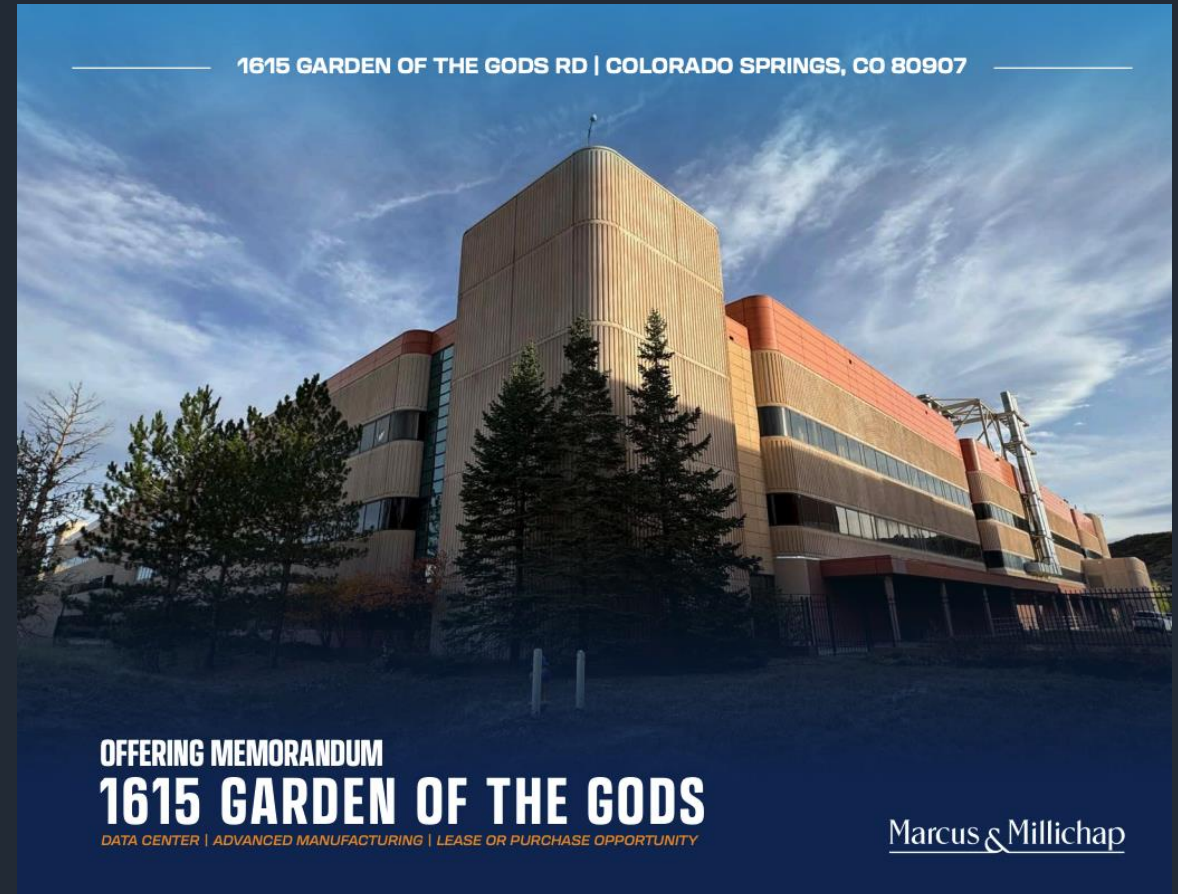
Nighttime



- Measured on an R8060 SLM, calibrated against a 95 Hz before every measurement

From Intel to Project Taurus: the power asset

- Marketed for years as “Corporate Ridge” / “Flexible FAB” / “Holland Park” “ready for retrofit,” ~70–90+ MW existing power.
- Raeden claims building can support 105 MW of industrial power
- The legacy infrastructure (heavy power, water, fiber, structural slab) is the whole attraction. Built for ~70–100 MW of industrial load.
- Currently zoned BP “business park”.



Raeden timeline

- Raeden (Oakland, CA) worked with the city for “over a year.”
- October 2025: Raeden applies for CSU Electric Large Load program
- March 2026: Project Taurus is submitted to the city
- Apr 7, 2026: town hall (Hyatt Place)
- May 14th, 2nd town hall
- Jun 11, 2026: administrative approval.
- Jun 22, 2026: six appeals filed (five accepted)
- Jun 23, 2026: ~100 residents protest at City Hall.
- July 23, 2026: Scheduled City Planning Commission appeal hearing
- August 2026+: Potential City Council appeal

ON THE RECORD

- Founded 2019, Oakland, CA. Co-founders Kari Schrader (CEO), Jason Green (President; co-founded Vantage Data Centers & Element Critical), and Lorin Dorco. Edward Stewart named COO (2026).
- Model: adaptive reuse — data centers placed into existing buildings.
- Named investors: Founders Fund, Friends & Family Capital, Johnson Controls (JCI Ventures), WVV Capital.
- This site: buying the building from 3G Venture — “exclusive to purchase,” not a joint venture

PART 02

What is being proposed?

PART 2 · WHAT'S PROPOSED

The site plan (sheet 3)

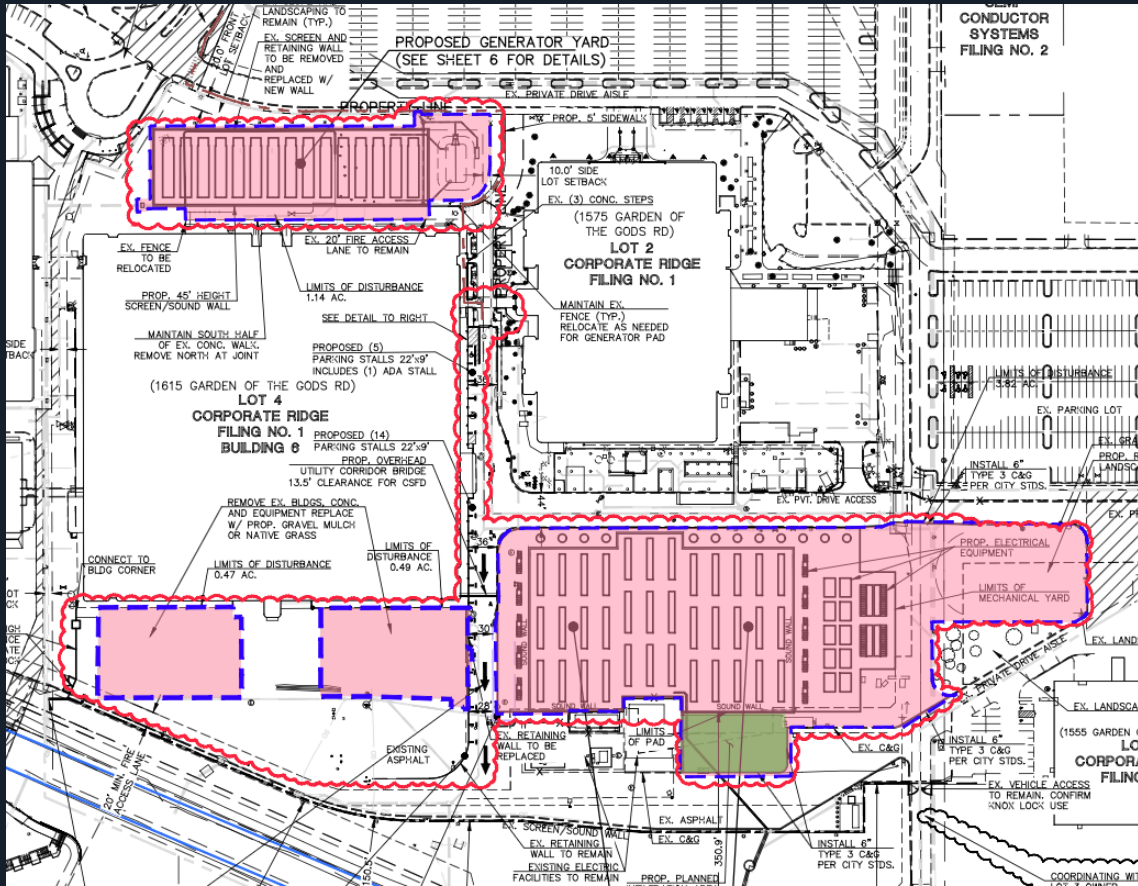
36

chillers

30

generators

DOCUMENTED



The chips: NVIDIA Vera Rubin

45°C / 113°F

warm-water supply temperature
(vs the 30°C industry standard)

100%

liquid cooled — every chip and
network part; zero server fans

~99%

of annual hours chiller-free in
cool, dry climates (NVIDIA)

- Warm-water, single-phase direct-to-chip liquid cooling;
- Coolant is ~75% water / 25% propylene glycol
- The high 45°C supply temperature is the whole trick: heat can be rejected to ambient air with dry coolers, so most facilities can drop mechanical chillers and evaporative towers.
- **The class of chip named for Project Taurus. Mass production begins H2 2026.**

WHY THIS MATTERS LATER

- **It genuinely enables near-zero water use**
- But dry cooling rejects ~100% of the heat as hot air

Raeden's claim vs. the equipment on the plans

DOCUMENTED

OPEN QUESTION

- Site plans (Sheet 3) show: 36 chillers, 30 generator units
- The plans (M201) show: 72 chillers, 60 generator units.
- Both figures are in the public record in the same document. They cannot both describe the full build.
- Open Question: If the building expands, where will the next chiller yard go?
- Open Question: If the building expands, where will the next generator yard go?

36

chillers in the noise
study, at 75% load

72

chillers on the approved
plan

**+36 chillers $\approx$ +3 dB · 75% → 100% load adds
more · toward the 50 dBA night limit**

One week before the hearing, the disputed sheet resurfaces

- July 1: Planning Manager Daniel Sexton states the record “will not be revised as it would be interpreted as a subsequent plan modification, which would impact each of the appeals.”
- July 2–3 : Raeden president Jason Green meets with Planning Director Kevin Walker and Sexton. His email calls the sheet's inclusion “a blunder” and says Raeden will “prepare the replacement slide” for the hearing.
- July 6–7: Applicant's counsel loops in Senior Corporate Attorney Trevor Gloss for “a quick call on a process question.”
- **The sheet in question is Sheet M201 — the same stamped, City-approved equipment schedule shown threeslides ago: 72 chillers, 60 generator units.**

72 / 60

Stamped equipment count
on the approved sheet
Raeden now calls a
“blunder”

Jul 23

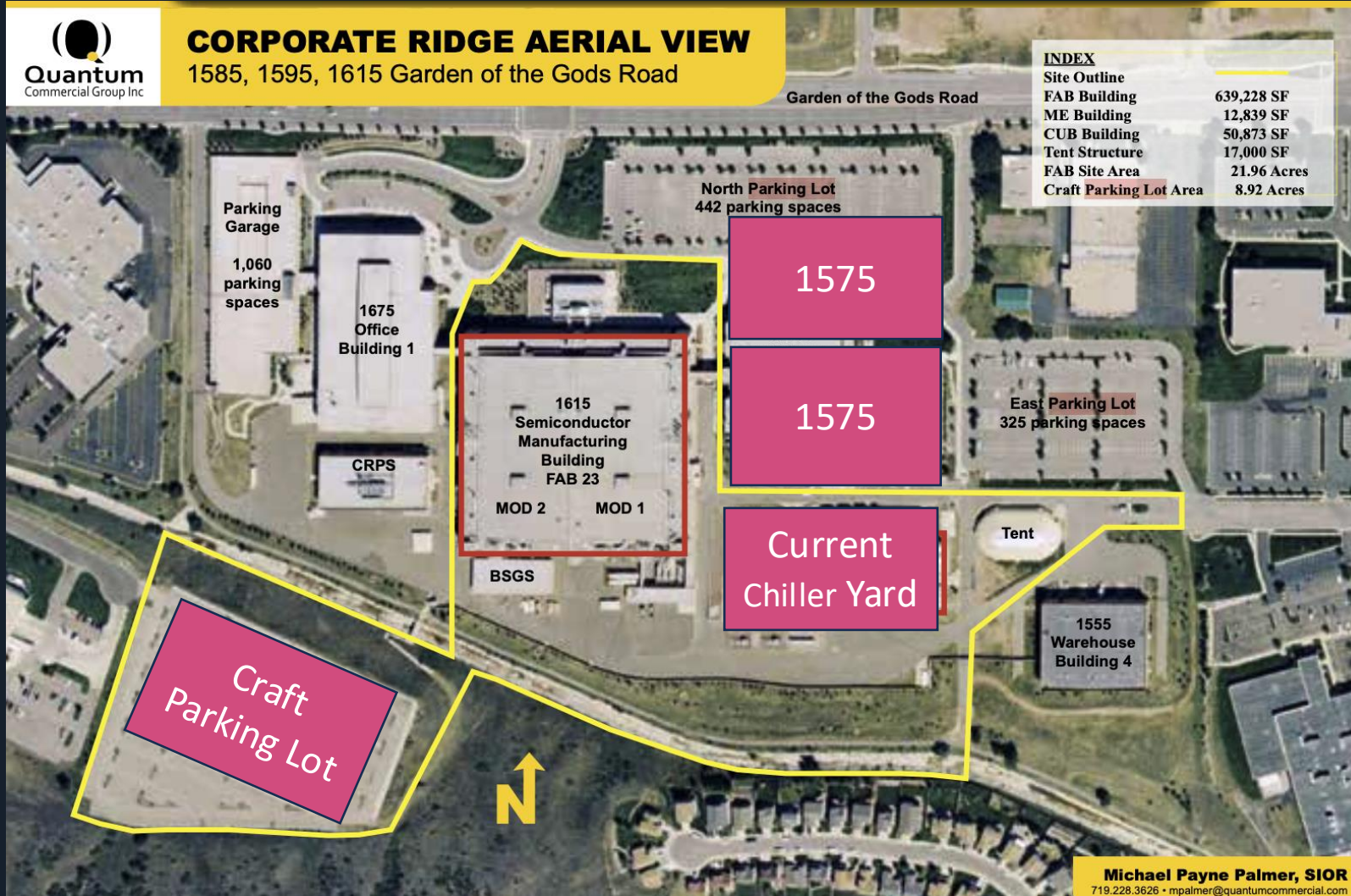
Planning Commission
appeal hearing where a
replacement slide is
expected

“I met with Kevin and Dan today” ... the sheet's inclusion “represents a blunder” ... Raeden “will prepare the replacement slide” for the hearing.

— Jason Green, Raeden president, July 3, 2026 email

Open question: the appellants relied on this exact sheet in their filed appeal. Neither the sheet's replacement, nor the process for it, has been shared with them.

Where would other chiller yards go?



- The current property has limited space for expansion to support additional chiller or generator yards.
- Primary concern is the “Craft Parking Lot” south of South Douglas Creek. A chiller yard there would require piping for coolant mix to go over the creek, greatly increasing risk leak into Fountain Creek watershed.
- There are other nearby properties, e.g. 1575 GoTG that could be acquired and demolished. There is an existing Skywalk between 1615 and 1575 that will demolished as part of Project Taurus.

PART 03

Electrical Impact

CSU's obligation to serve

DOCUMENTED

- CSU is a municipally owned utility and the sole electric provider in its territory
- A municipal utility carries an obligation to serve customers at “just, reasonable, non-discriminatory” rates
- Utilities Board (COS City Council) sets rates to cover the cost to serve.
- Electric customers >10 MW fall under the Electrical Large Load tariff
- ELL is contract by application only
- New ELL rates were approved April 1st, 2026



The approved Large Load rate (ELL)

DOCUMENTED

CONTRACT TERMS (EFF. APR 1, 2026)

- Applies to loads > 10 MW
- 10-year minimum contract; auto-renews in 36-month terms; late fee 1.5%/month
- Customer pays all transmission/distribution extension costs; owns the substation at transmission voltage
- SPP RTO costs passed through to the customer
- Customer owes 10 years of minimum bills regardless of usage.
- Collateral = 36 months of minimum bills (cash or letter of credit).
- New ELL tariff is strongly rate-payer protective

● Source: CSU Electric Large Load (ELL) Rate Sheet, eff. 4/1/2026



Colorado Springs Utilities
It's how we're all connected

Electric Large Load (ELL) Rate Schedule Summary

As of April 1, 2026

Industrial Service – Large Load

Applicable to industrial customers with loads greater than 10 MW. Customers requesting future service are required to complete an application and pay applicable large load study fees¹. Pursuant to Utilities Rules and Regulations, Utilities may execute Economic Development Special Contracts with selected customers receiving service under this rate schedule.

Service considerations include:

- Minimum 10-year initial contract period. Contract specifies load requirements and other terms and conditions.
- Retail service at transmission or distribution voltage.
 - a. Transmission voltage (customer owns, maintains, operates substation).
 - b. Distribution voltage (customer pays substation facilities fee).
 - c. Customer responsible for cost of transmission and distribution extensions or modifications required to provide service.
- Subject to Southwest Power Pool Regional Transmission Organization (SPP RTO) tariff provisions. Utilities will pass through any cost incurred by SPP RTO related to serving the customer's load.
- Interim service through market purchased power agreements (PPA) and/or capacity purchase agreements (CPA) until Utilities acquires adequate resources to serve the customer's load.

Bill components include:

Description	Industrial Service – Large Load (ELL)
Access and facilities, per day	\$8.9065
Demand Charge Secondary, per kW, per day (primary or transmission discounts may apply)	\$0.8593
System Support Charge, per kW, per day ²	\$0.0859
Resource Adequacy Charge, per kW, per day ²	\$0.4110
Purchased Energy Charge, per kWh ³	By contract
Purchased Capacity Charge, per kW, per day ³	By contract
Electric Cost Adjustment (ECA), per kWh	\$0.0233
Electric Capacity Charge (ECC), per kWh	\$0.0036

Minimum monthly bill based on highest of⁴:

- Monthly demand and energy, or
- 100% of contracted load and energy requirements, or
- 100% maximum prior 12-month demand and monthly energy

Customer is responsible for 10 years of minimum monthly bills regardless of usage or service. Collateral requirement of cash or letter of credit equal to 36 months of estimated minimum monthly bills.

- After initial term, contract will automatically renew for additional 36 months unless customer provides notice to request termination.
- Late payment fee of 1.5% per month assessed on overdue balances.

¹ Large Load Study Fees and Advance payments are applicable pursuant to Utilities Rules and Regulations. Provisions or requests related to Regional Transmission Organization (RTO) tariffs or procedures and related cost may be applicable.
² Charges apply only during initial 10-year contract period.
³ The purchased Energy Charge or PPA and/or the purchased Capacity Charge or CPA cost will be passed through to customer in lieu of the ECA and ECC until Utilities has adequate resources to provide service under the ECA and ECC rates.
⁴ After initial 10-year agreement, minimum monthly bill is based on the higher of monthly demand and energy, or 68% percent of maximum prior 12-month demand and monthly energy.

The ELL Application CORA Request

WHAT THE DOCUMENT SAYS

- Describes a build-out of up to 300 MW critical / 420 MW gross, six 50 MW bays.
- Publicly, and to City planners, the project was described as roughly 50 MW.
- Obtained through a Colorado Open Records Act request filed by Kyle McGuffey, a 14-year-old Colorado Springs student, who sent requests to both the City and Utilities on his own initiative (The Gazette, July 12, 2026).
- His records have been cited by the groups organizing two of the filed appeals.

WHAT THE APPLICANT SAYS

- **Raeden president Jason Green: the document was issued when Raeden was evaluating the building, before it had a detailed proposal.**
- Later conversations with Utilities and site visits showed the maximum power available to the building was around 50 MW.
- **“All it was meant for was a guided conversation.” — Green, to The Gazette**



Utility Power Provisioning at 1615 Garden of The Gods

Data center owners and operators conflate the reality of developing and delivering a data center with the actual timing needed to install all the actual infrastructure needed to use power within the data center. Raeden bases the analysis of “site readiness” at 1615 from the date of contract signature and the resulting efforts needed to redevelop and prepare the site for Production use.

- **November 15, 2025**
 - Estimated date of Customer Contract Signature
- **Long Lead Dates**
 - Generator Permitting (6 months)
 - May 15, 2026
 - Various Long Lead Electrical (power) and Mechanical (Cooling) Equipment Deliveries (6 months)
 - May 15, 2026
 - Level 5 Cx Completion – Assumes 15 day installation of all Long Lead Equipment by June 1, 2026
 - July 1, 2026

The site will need at least 50% of the Gross Power capacity by April 1, 2026 to test and prepare various Power and Cooling systems upon installation (reflective of the Cx Levels 1-3).

The site will need 100% of the Gross Power by June 1, 2026 for Level 5 Cx to test all systems at 100% load capability, known as Integrated Systems Testing (IST).

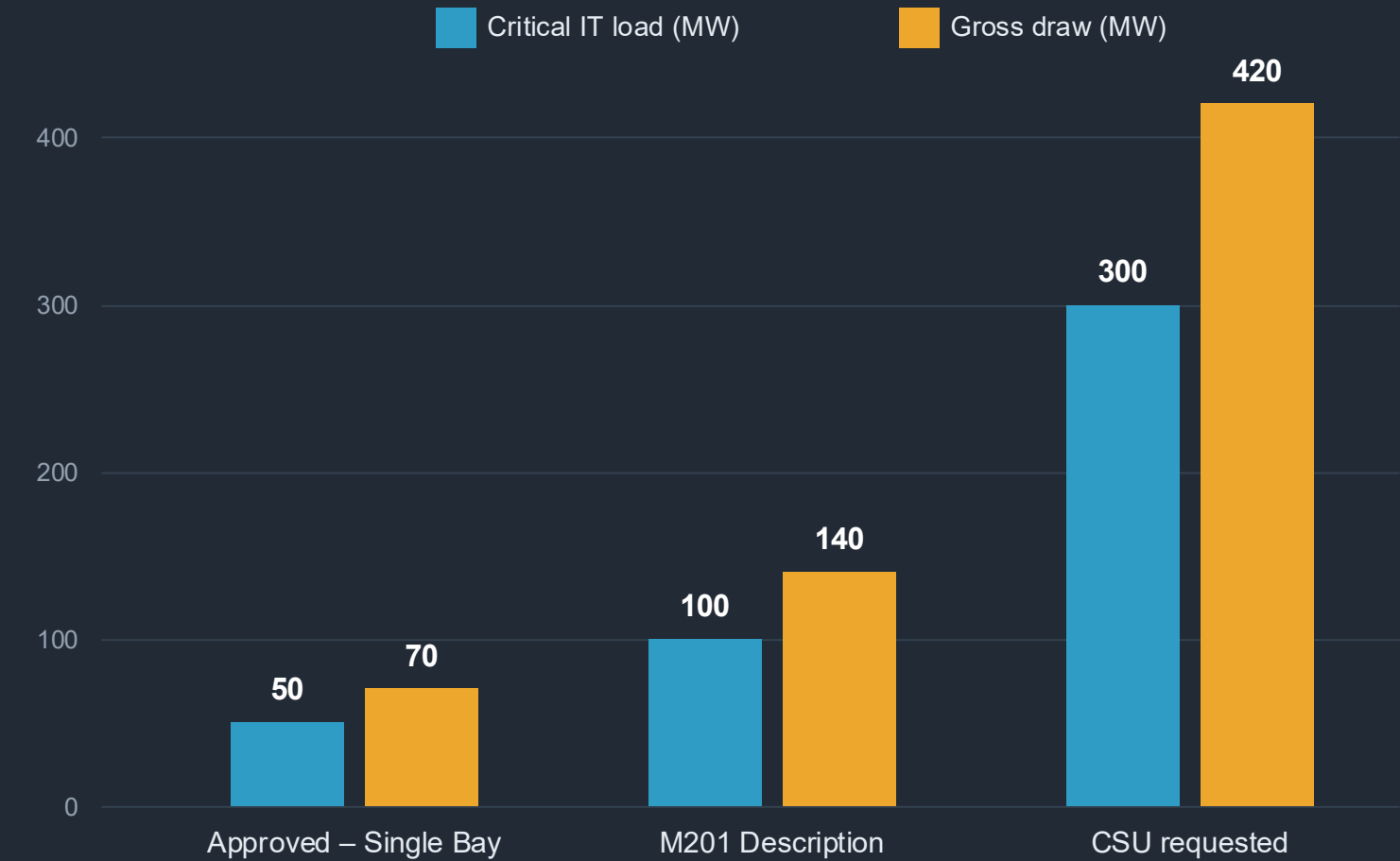
The site will continue to need 100% of the Gross Power ongoing as the Customer will immediately transition from Level 5 Cx completion to Production use/operations by August 1, 2026 (earliest) or September 1, 2026 (latest).

How Much Represents “Enough?”

All data center deployments will literally use as much power as the utility or other generator/distributor can provide. If 1615 can support 100MW of Gross Power on July 1, 2026, the Customer will use 100MW of Gross Power. The Basis of Design allows Raeden to subsequently build out Kits in a very predictable manner such as long as power exists, the Kits will install up to 300MW Critical Power (420MW Gross Power) to fully utilize all the space and resources at 1615.

Despite the normal and natural perception of data centers as underutilized “hogs” of power just wanting to control the capacity but not using anywhere near the contacted maximums, modern AI data centers want and will use the power as quickly as possible.

One facility, three scales



WHAT EACH IS

Phase One: 50 / 70

The one bay that is sited and approved.

Phase Two: 100 / 140

The full build M201 equips (72 chillers). The second yard is not sited.

CSU requested: 300 / 420

Likely not buildable on current site due to space for chiller and generator yards.

Critical = IT load. Gross = draw on CSU's system (~1.4 PUE).

Sources: Raeden CSU submission; sheet M201; filed appeals
● Sources: Raeden CSU large-load submission (CORA); sheet M201; gross at ~1.4 PUE

How is the 50 MW actually served? Three accounts that don't reconcile

Abby Ortega — CSU

May 14 neighborhood meeting (public)

The 50 MW would be purchased through a power purchase agreement (PPA) and transported to Colorado Springs over the Southwest Power Pool.

Jason Green — Raeden

July 7 meeting

The capacity was grandfathered from MISO, now served by SPP. CSU already owns it and is losing money on it monthly. Raeden is “assuming a defunct contract.”

CSU Records Custodian

CORA response

CSU executes no PPA/CPA without a Large Load Service Agreement first. No LLSA is in place for Raeden or any customer. No PPAs/CPAs, no stranded assets. “No responsive documents.”

WHERE THE ACCOUNTS COLLIDE

- ≠ Ortega: CSU buys the 50 MW on the market via a new PPA vs. Green: the capacity already exists and Raeden is just absorbing it.
- ≠ Green: CSU holds stranded MISO/SPP capacity it loses money on vs. CSU's records: no PPA/CPA exists, and there are no stranded or unsubscribed obligations.
- ≠ Both meetings imply the power is arranged vs. CSU confirms no service agreement (LLSA) and no PPA are in place

Sources: May 14 neighborhood meeting recording; July 7 meeting notes; CSU CORA response (large-load / PPA request).

PPA CORA request

WHAT I ASKED CSU

“Any wholesale power purchase agreement (PPA), capacity purchase agreement (CPA), or capacity/resource contract currently held by [CSU] that was originated, novated, or ‘grandfathered’ from a prior regional transmission organization or market (SPP, the Western EIM, MISO, or a predecessor arrangement), and that is presently unsubscribed, stranded, or not allocated to a serving load — i.e., capacity CSU is contractually obligated to pay for that is not currently assigned to a customer.”

— Item 1, CORA request to Colorado Springs Utilities (Thomas Carter)

CSU'S WRITTEN RESPONSE

“CSU does not enter into a Power Purchase Agreement (PPA) or Capacity Purchase Agreement (CPA) without first executing a Large Load Service Agreement (LLSA) with the customer. At present, CSU does not have an LLSA in place for Project Raeden or any other customer. Consequently, CSU has not executed any PPAs or CPAs that would result in stranded assets or unsubscribed power obligations.”

— Colorado Springs Utilities, written CORA response

PPA CORA Request

WHAT I ASKED CSU

Any record identifying such capacity or contract(s) as a source of service, in whole or in part, for the Project Taurus / Raeden large load at the Corporate Ridge / 1615 W. Garden of the Gods Road site served from the Rampart substation, including any assignment, allocation, or reservation of that capacity to this load.

— Item 1, CORA request to Colorado Springs Utilities (Thomas Carter)

CSU'S WRITTEN RESPONSE

“Project Taurus states a load demand of 50 MW. The site is located within an industrial corridor and can support this load without requiring additional system upgrades, equipment purchases, or infrastructure improvements. Any planned increase in electric demand exceeding 5 MW requires a large load study to evaluate needed system improvements, upgrades, infrastructure modifications, and generation capacity. The customer is responsible for all costs associated with this study. CSU completed a study for the current customer and building owner that provided the necessary analysis. The study was funded by the customer and is owned by the customer.”

— Colorado Springs Utilities, written CORA response

PART 04

Water Impact

Water: the data, in perspective

DOCUMENTED

OPEN QUESTION

- Closed-loop water + glycol; ~200,000-gallon initial fill. Greene: “the bulk of the water use is on day one.”
- The benefit of air-cooling versus evaporative cooling is clear: “Near zero” daily water usage. Routine makeup (leaks, maintenance) is on the order of thousands of gallons a year.
- High-quality, industrial grade glycol mixes (e.g. Dowtherm/Dowfrost) can last 20+ years, assuming proper maintenance, chemistry, etc.
- Raeden claimed at May 14th meeting that the site was originally permitted for 1 million gallons per day as the Intel Fab.
- Leak risk is addressed in the Environmental section.

~1–1.5M

gallons/day ,if this were evaporatively cooled

The water cost of a megawatt

A data-center megawatt carries water two ways — cooling on site, and power generation upstream. This facility eliminates the first; the second depends on the grid mix modest on CSU's, and falling as coal retires.

TYPICAL EVAPORATIVE DATACENTER

~480 gal/MWh

water consumed for cooling (WUE ~1.8 L/kWh), evaporatively cooled

≈ 3–4 million gallons/year per MW

≈ 0.4–0.6 million gallons/day at 50 MW

INDIRECT — POWER GENERATION

~250 gal/MWh

on CSU's 2025 mix: gas 38%, coal 19%, renewables/hydro 26%, market 17%

≈ 1.6–2.2 million gallons/year per MW

≈ 0.2–0.3 million gallons/day at 50 MW, upstream

THIS FACILITY: ~0 gallons on site.

The catch: the only remaining footprint is upstream ~250 gal/MWh on CSU's mix (~0.2–0.3 MGD at 50 MW), between ~0 (all renewable) and ~700 (all fossil), and falling toward ~120 as CSU retires coal by 2033. Also, if the market purchased power is not through CSU, the water intensity will change.

● Sources: direct WUE ~1.8 L/kWh (LBNL/Green Grid, ~480 gal/MWh); indirect = NREL/USGS (Macknick 2012) consumption factors applied to CSU's 2025 resource mix (~250 gal/MWh). Consumption, not withdrawal; CSU hydro treated as run-of-river. Per-MW at ~75–100% load.

PART 05

Noise Impact

COS Noise Ordinance

- “Adjacent Zones: When a noise source can be measured from more than one zone, the permissible sound level of the more restrictive zone shall govern.”
- “The noise shall be measured on the A weighing scale on sound level meter of standard design and quality and having characteristics established by the American National Standards Institute.”
- ”...if the noise source is located on private property or property other than the public right of way, at least twenty five feet (25') from the property line of the property on which the noise source is located.”

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)

50 dBA

7 PM -> next 7 AM
“night”

55 dBA

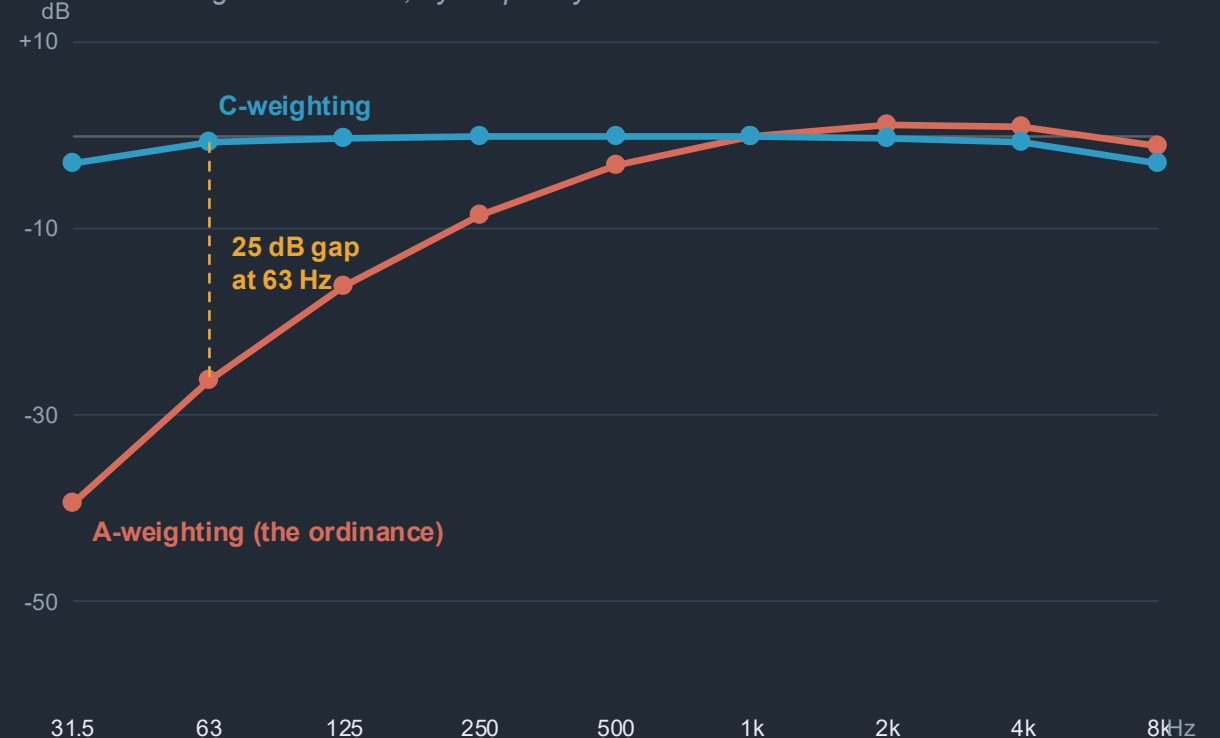
7 AM -> next 7 PM
“day”

Low-frequency noise

WHAT IT IS

- Large air-cooled chillers and their condenser fans radiate strong low-frequency noise
- The COS ordinance is measured in A-weighting (dBA), which de-emphasizes low frequencies. It under-measures exactly the sound these fans produce most of.
- Low-frequency noise carries farther and passes through walls; it is a documented source of annoyance and sleep disruption even at levels that meet an A-weighted limit.
- The city's own consultant (Hankard) says low-frequency and infrasound research is limited and no consistent standard exists, but "no standard" is not "no impact."
- International practice (ISO 1996) applies a +3 to +6 dB rating-level adjustment where tonal or low-frequency content is present.
- Open question: the City requires neither C-weighted measurement nor a low-frequency adjustment. It should require both before approval is final.

How each filter weights the sound, by frequency



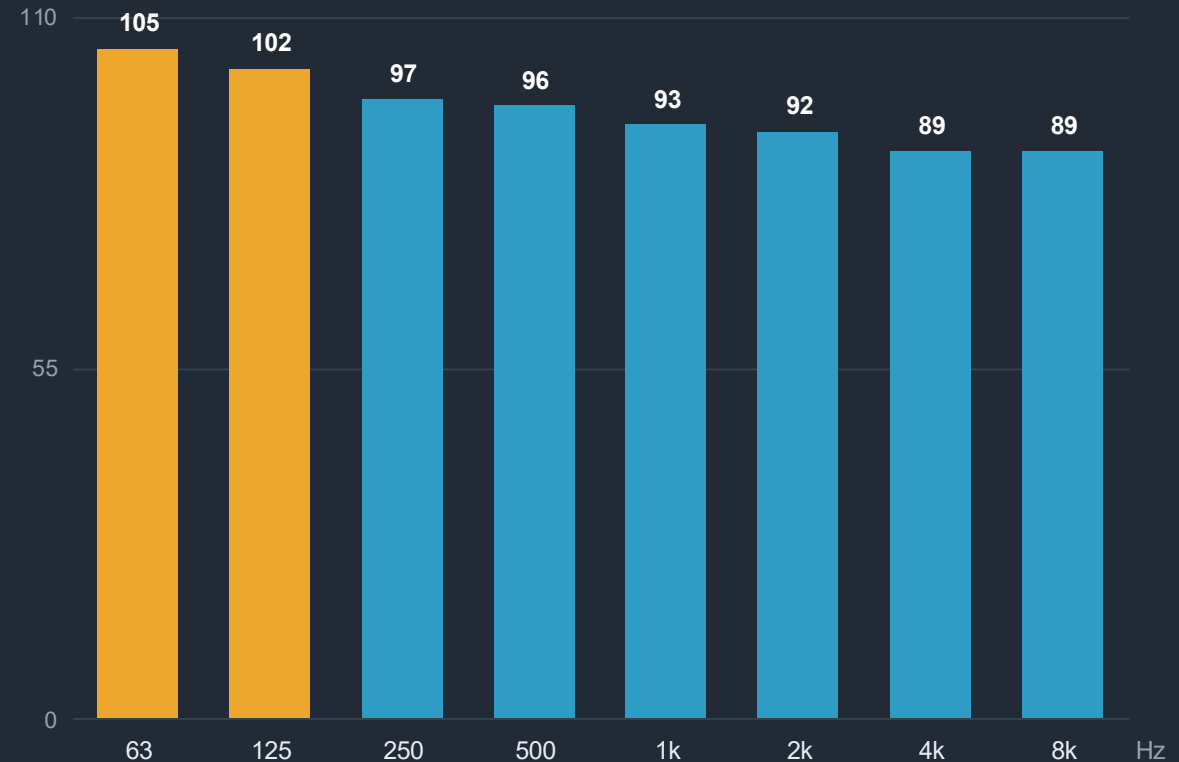
The point: the same 63 Hz rumble reads ~25 dB lower on the A-weighted meter than on a C-weighted one. The ordinance isn't wrong about loudness in general — it's blind to this source in particular.

The chiller: Multistack ACF552M-class

SPECIFICATION

- Raeden has said the chiller will be in this class, but it may not be this brand
- Air-cooled, magnetic-bearing centrifugal chiller, oil-free, variable-speed.
- **24 EC condenser fans (Ziehl-Abegg SG096 ECM), 12 V-coils — the dominant low-frequency source.**
- 5 × Danfoss TG380 Turbocor compressors
- Flooded-evaporator technology.
- Type U condenser coil; fan discharge silencers fitted.
- Integrated free-cooling (economizer) mode, compressors off when ambient allows.

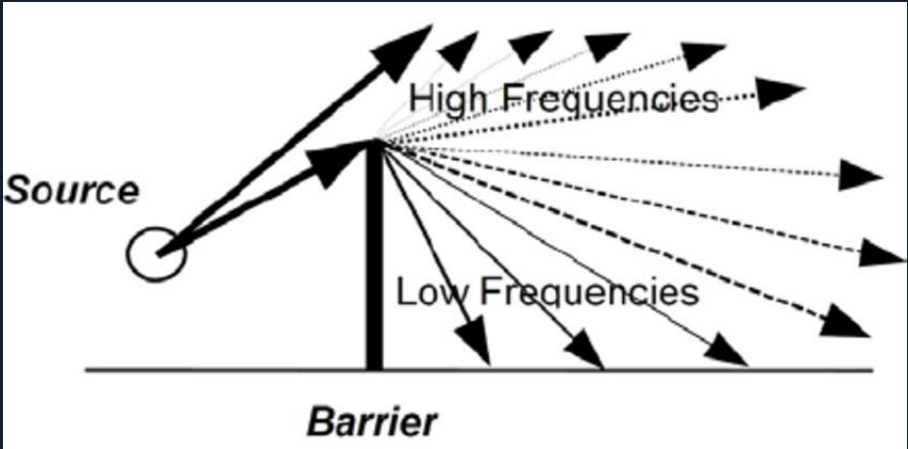
Sound power by octave band — 100% load, unweighted (dB re 1 pW)



Peaks at 63 Hz (105 dB). Total = 99 dBA — A-weighting discounts the loudest band ~26 dB.

The Sound Wall

- Part of the included sound mitigation is a sound wall
- 33' max height, at least 12' higher than chillers
- Silent Protector Plus (produced by AIL) is selected on the approved plan
- The product datasheet makes no claim regarding Octave Band 1, centered on 63 Hz.
- STC is measured on 125 to 4000 Hz, ignores below 125 Hz
- NRC is the average of absorption at 250/500/1000/2000 Hz, ignores below 250 Hz
- Neither STC or NRC capture the dominant noise from chillers (between 60 – 120 Hz)
- For low frequency sound, diffraction of low-frequency over the top of the sound wall is the dominant transmission mechanism



Element	Sound Transmission Loss (dB)						
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
Barrier Panel	N/A*	30	28	34	43	45	49
Acoustic Louver	6	7	10	12	18	18	14

*Basis-of-design manufacturer does not have TL data at this frequency, which is common for this type of product.

“Free cooling”: regularly available, but not quiet

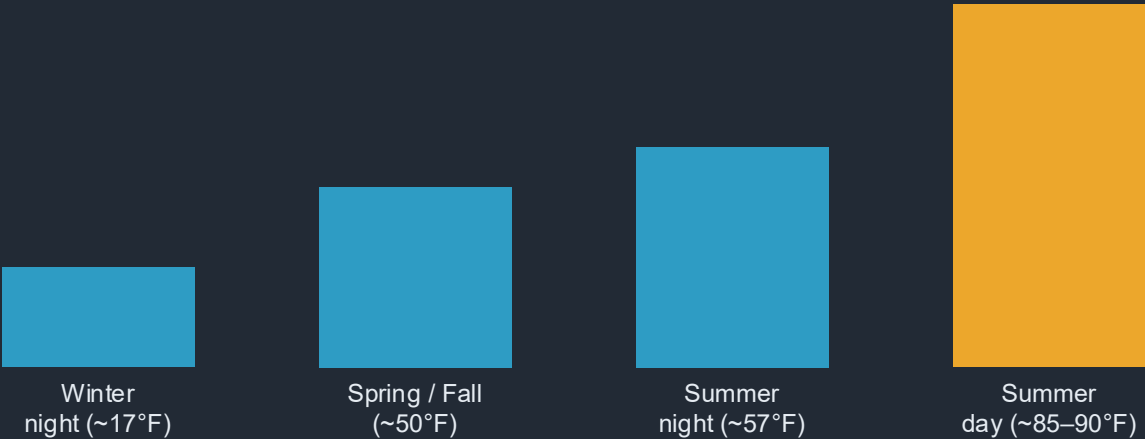
>50%
of COS hours allow free cooling
(compressors off) — even summer

~23 days/yr
reach the 90s°F

24 / 7 / 365
the fans run regardless —
and ramp up as it warms

Relative fan output (≈ 63 Hz noise) by condition — fans work hardest when ambient is warm

louder ↑

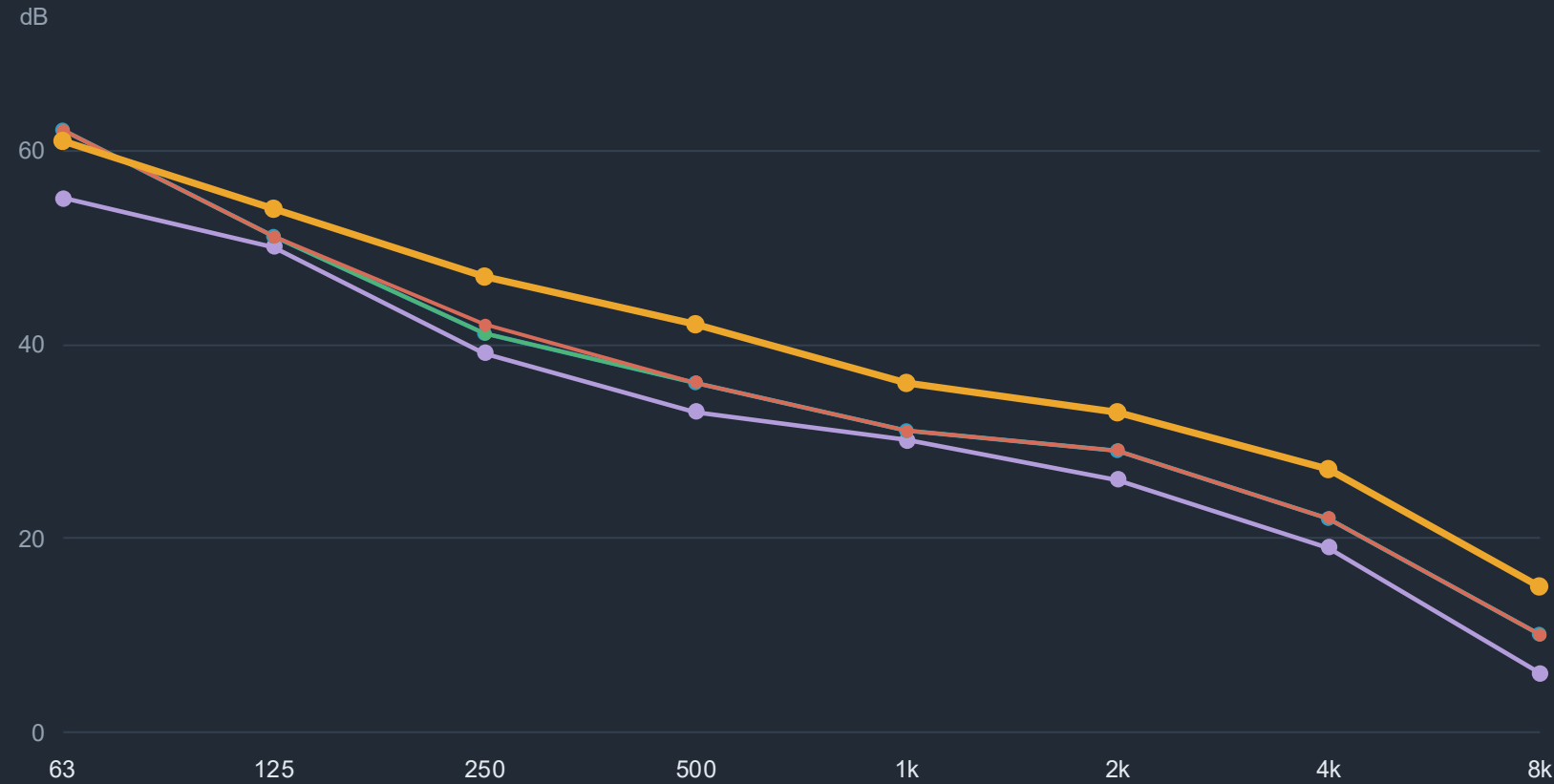


THE CATCH

- The 113°F loop is so warm that COS air can cool it often without needing compressors. Good for power and water.
- But free cooling means the fans do all the work. Colder air rejects heat easily (slow fans); warm summer air does not (fast fans).
- **So the loudest fan operation is warm summer evenings, i.e. windows open, people outside.**

Five modes of operation — one spectral shape

Octave-band level modeled at the nearest home. Every mode peaks at 63 Hz and slopes toward the highs.



MODE (dBA / dBC)	
100% operation	45 / 61
Normal	41 / 62
Generator test	41 / 62
Emergency	41 / 62
Free cooling	38 / 56

Modes 2–4 are near-identical — their lines overlap.

Every mode is the same shape: a 63 Hz peak falling toward the highs.

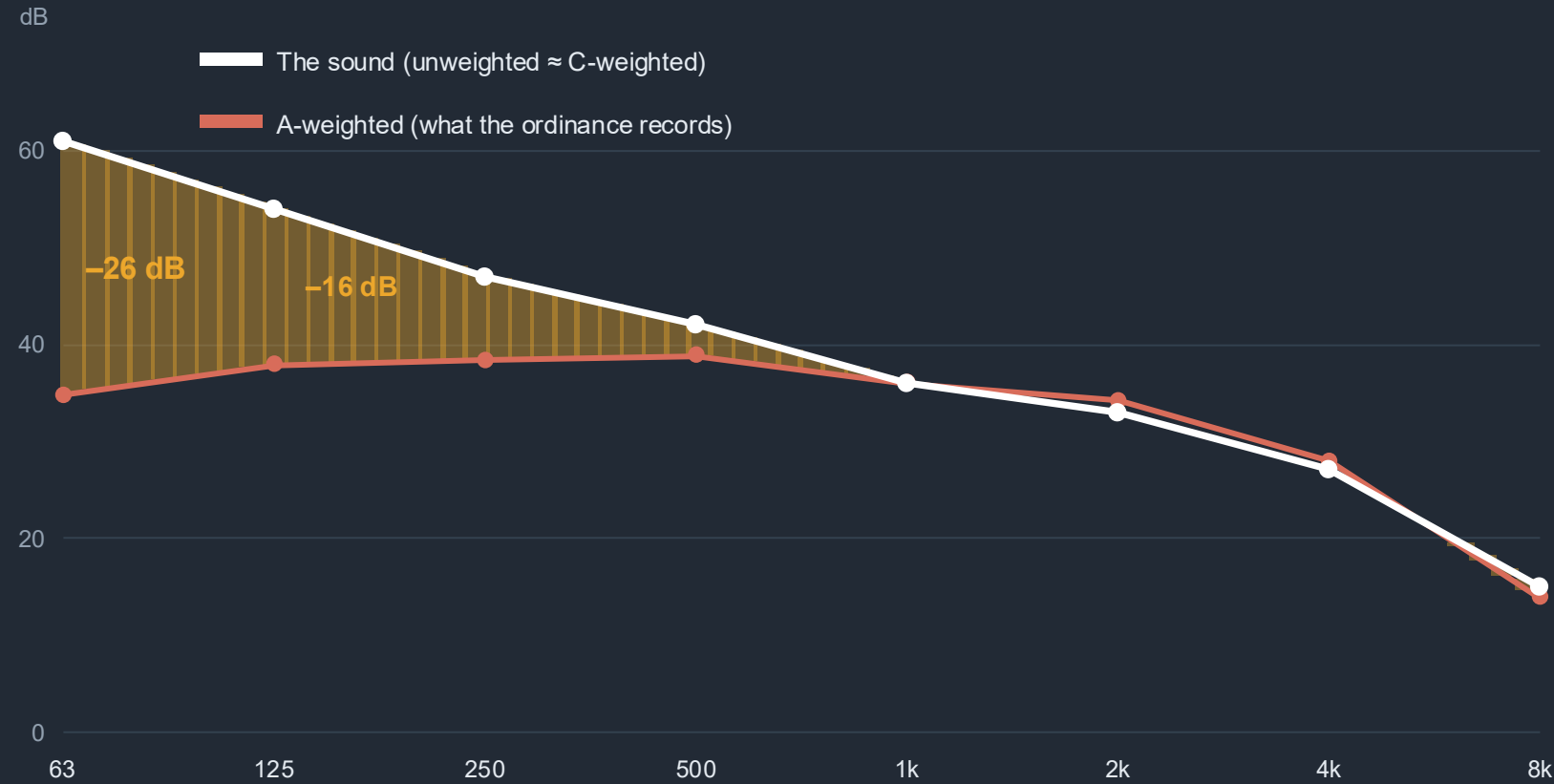
A-weighted totals stay 38–45 dB; the low-frequency energy is what the 56–62 dBC totals capture.

The takeaway: whether at full load, normal operation, generator test, or “free cooling,” the sound is dominated by the 63–125 Hz bands — the part the A-weighted ordinance discounts most.

● Source: applicant noise model receptor scenarios (Figure 12 data), ISO 9613-2:2024. Correction disclosed: Scenario 4’s published dBC (26) is plotted here as ≈62 — its own octave bands sum to ≈62, and dBC cannot fall below the same scenario’s 41 dBA. Treated as a transcription error in the source sheet.

The same sound, as A-weighting measures it

The shaded area is the low-frequency energy A-weighting subtracts — largest exactly where this equipment is loudest.



MEASURED TWO WAYS

61 dBC
the sound as it exists

45 dBA
what the ordinance records

A-weighting subtracts 26 dB at 63 Hz and 16 dB at 125 Hz — and almost nothing by 1 kHz.

It isn't a different sound. It's the same sound, measured as if the low frequencies weren't there.

Flip back one slide: the sound peaks at 63 Hz. A-weighting's own peak is at 500 Hz — so it reports this source as 45 dB while a person still hears a 61 dB low-frequency hum.

● Scenario 1 (100% operation). Standard A-weighting applied to the applicant's modeled receptor octave bands; totals match the applicant's stated 45 dBA / 61 dBC.

What the studies found

- DLAA (developer-commissioned): ~42 dBA at the nearest property line.
- Hankard Environmental (the city's independent check): ~43 dBA
- But the independent check validated against the same 36-chiller / 75% scenario.
- Homeowners have contacted a 3rd party noise consultant
- UCCS students are working on an independent noise study

~43 dBA

independently confirmed — at 36 chillers,
75%

*Quick reminder: Decibels (dB) are logarithmic.
Noise doubling = 3 dB
Noised increasing 10x = 10 dB*

The mitigation targets the wrong frequencies

The chiller is loudest at 63 Hz — and that is the one band the silencers and wall barely touch.

Octave band	63 Hz	125 Hz	500 Hz	1000 Hz
Chiller sound power, 100% (dB)	105	102	96	93
Silencer reduction, 60" (dB)	-2	-3	-13	-14
Wall absorption coefficient α	0.10	0.29	0.99	0.99

Amber column = the dominant band. Green = where mitigation actually works.

WHAT THE DATA SHOWS

- The chiller's sound power peaks at 63 Hz (105 dB)
- The specified silencers cut that band by only 1–2 dB, while cutting 500–1000 Hz by 13–14 dB.
- The barrier absorbs ~10% of 63 Hz (α 0.10) versus ~99% at 500–1000 Hz.
- **The Silent Protector Plus datasheet omits Octave Band 1 (63 Hz) entirely; STC and NRC both exclude the dominant band.**
- **Mitigation and ordinance alike are tuned to the frequencies this equipment barely produces.**

New signed Development Agreement actually requires

- Financial assurance: \$1,000,000 posted within 60 days of signing, held by the City for the 10-year term plus one additional year.
- Sound Monitoring Plan (finalized 7/16/26) is incorporated by reference and binding wall and third-party post-construction inspection are required before occupancy, a failure to comply with it is an independent Event of Default
- A 30-foot screen wall before start of operations.
- Decommissioning: if the data center closes or ceases operating for 30+ days, Raeden must notify the City and provide a closure/decommissioning plan (equipment removal, site restoration).
- Term: 10 years from July 16, 2026. On default, the City can terminate, withhold permits, complete the work itself and bill Raeden, or withhold future approvals.
- Open Question: Is \$1 million enough to provide surety of decommissioning in the event of closure of 1615?

\$1M

Financial assurance
required within 60 days

10 yr

Agreement term, plus 1-
year assurance tail

Note on the parties: the Owner, 3G Venture II LLC (John Chen), is released from all obligations once it conveys the property to Developer R 1615 High Tech LLC (Raeden's entity) — all ongoing obligations then rest with Raeden alone.

“No third-party beneficiaries”

“Enforcement of the terms and conditions of this Agreement... shall be strictly reserved to the Parties hereto, and nothing... shall give or allow any such claim or right of action by any other or third person or entity... Any person or entity, other than the Parties, receiving services or benefits under this Agreement shall be deemed to be incidental beneficiaries only and no rights shall accrue to such parties.”

— Development Agreement, Section 8 (“No Third-Party Beneficiaries”)

- **In plain terms: only the City, the Developer, and the Owner can enforce this agreement, NOT Chelsea Glen neighbors, not the appellants, not the public.**
- The financial assurance, the Sound Monitoring Plan, and every default trigger in it are enforceable at the City's discretion only.

Checked against the citizen ask

This slide's proposed term sheet (later in this deck) asks for:

“A recorded agreement enforceable by the City and residents... real remedies for breach.”

The Development Agreement, as signed, does not do this — it explicitly forecloses resident enforcement. That gap is real and remains open.

PART 06

Heat

A small power plant's worth of heat

~70 MW

of heat rejected to local air, continuously

24 / 7

day and night, via 72 air-cooled chillers

0

local thermal / microclimate studies on record

- A data center converts ~all its power to heat.
- Chiller yard is ~350' away from residential property line
- COS currently does NOT require heat island analysis.

From the COS City Approval Analysis Memo:

“The Project Taurus site is already a predominantly developed industrial property, and the proposed backup generators and chillers represent the primary new sources of potential heat-island effects. City staff acknowledge that virtually all man-made surfaces absorb solar energy and therefore contribute to heat-island conditions; however, they were unable to identify any regulatory framework establishing enforceable standards for heat-island mitigation. Although research in this field is advancing, current data do not provide a consistent or measurable basis for regulatory criteria.

Considering the foregoing analysis, the Applicant has shown responsiveness to agency and staff reviews and comments, as well as to concerns articulated by neighborhood stakeholders. This collaborative process culminated in a Development Plan Modification deemed both compliant with, and in conformance to City Code”

How much heat is ~50 MW, really?

GROUND-SUNLIGHT EQUIVALENT

~59 acres

of full sunlight — 24-hour average — falling on open ground.

≈ 2.7× the whole 22-acre site

≈ 45 football fields

(~12 acres at peak noon sun — the conservative floor)

RESIDENTIAL A/C EQUIVALENT

~4,000 homes

of central-air-conditioning heat rejection — all running at once.



each ▪ ≈ 100 homes · bracket 3,500–5,000 by unit size

All of it concentrated onto a chiller yard of a few acres ~350 ft from homes

● Sources: NREL NSRDB — Colorado Springs GHI ~5.0 kWh/m²/day (~208 W/m² 24-hr avg); ~50 MW facility IT load; ~13 kW heat rejection per 3-ton residential condenser

PART 07

Environmental



Watershed

- Site drains → Douglas Creek → Fountain Creek → Arkansas River.
- Fountain Creek is already state-listed impaired (selenium, E. coli).
- Its creeks supply ~15% of Colorado Springs' drinking water and irrigate 100+ farms before it joins the Arkansas River in Pueblo.
- 30 or 60 generators means substantial on-site diesel storage.
- Diesel is the largest single spill vector on the site
- A release that reaches stormwater is the high-consequence event.

Downhill: Site → Fountain Creek



DOCUMENTED

Uphill: Fountain Creek ← Site



What's actually in the “closed loop”

- ~200,000 gallons of treated coolant — water + glycol, not potable or raw water.
- Typical additives in chiller / liquid-cooling loops:
 - Glycol (ethylene or propylene) — antifreeze
 - Biocides (isothiazolinones, glutaraldehyde, quaternary ammonia) — aquatic toxins
 - Corrosion inhibitors, scale inhibitors, pH buffers
- **Exact fluid chemistry and volume should be disclosed, and Safety Data Sheets should be provided**

Air quality: 30 diesel generators next to homes

30

Tier 4 diesel gensets
3.5 MW each

~180k gal

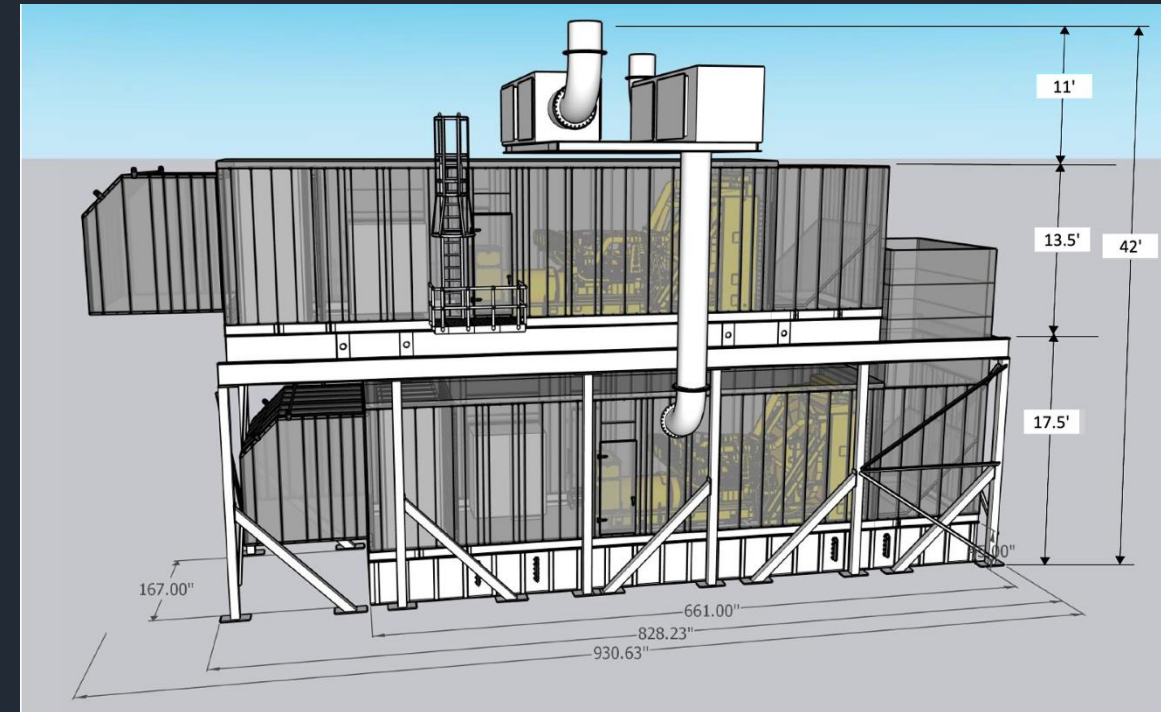
on-site diesel
(24 hrs, contained)

WHAT'S ESTABLISHED

- Units are Tier 4, the cleanest EPA diesel tier, with SCR exhaust scrubbers, and go through full Colorado state air-quality permitting.
- They run for monthly testing, and continuously during any grid outage.
- Fuel is stored in double-wall belly tanks with 100% containment; refueling is by contract.

STILL OPEN

- ? Emissions during extended grid-down running — how many hours per year, and at what modeled ground-level concentrations at the homes 350 ft away?
- ? Cumulative monthly-test emissions, and the exhaust plume behavior under winter inversions.



PART 08

Economics



CSU electrical revenue at 50 MW

Scaled from CSU's Electric Large Load (ELL) rate. Demand billed at 100% of peak, energy at 75% load. A real, ratepayer-protected benefit — the clearest thing the project brings the utility.

~\$33.6M

per year, at 50 MW

~\$2.8M

per month

~\$336M

over the 10-year minimum term

ELL charge	Rate	\$/yr @ 50 MW
Demand	\$0.8593 /kW-day	\$15.7M
Support	\$0.0859 /kW-day	\$1.6M
Resource adequacy	\$0.4110 /kW-day	\$7.5M
Energy (ECA + ECC)	\$0.0269/kWh × 75%	\$8.8M
Total		~\$33.6M

Demand billed at 100% of peak; energy at 75% load factor — the utilization the noise study also assumed. Access ~\$3k/yr, negligible.

For scale: at ~70 MW gross draw this is ~\$47M/yr, and at the full two-bay ~140 MW build ~\$94M/yr. This is utility revenue — separate from the one-time equipment use tax and from the ~20–100 jobs.

STRUCTURED TO PROTECT RATEPAYERS

- **10-year minimum contract**
- Demand charges billed even if idle — ~\$24.8M/yr guaranteed (take-or-pay)
- Customer pays all interconnection & line-extension costs
- 36 months of collateral required up front
- Wholesale (SPP) energy cost passed straight through — no ratepayer subsidy

● Source: CSU Electric Large Load (ELL) Rate Sheet, eff. 4/1/2026, scaled to 50,000 kW at 8,760 annual hours.

No economic-development incentive

“We have not entered into a contract rate with Raeden at this point, nor will there be provided any economic development incentive.

Jared Miller — Colorado Springs Utilities · May 14 neighborhood meeting

DOCUMENTED



ECONOMIC DEVELOPMENT INCENTIVES

1. Data used to determine whether an incentive is offered (pre-contract)

Before any incentive is considered, all prospective economic development customers are evaluated using forecasted, forward-looking data provided by the customer and evaluated by CSU. This includes, but is not limited to:

- Forecasted utility usage (electric, water, gas, wastewater).
- Anticipated load profile and operational characteristics.
- Capital investment and broader economic development impact.
- Job creation, salary.

Jobs Creation			
# of new jobs	Input value	Salary	Input value
<25	1	<\$35,000	1
25-50	2	\$35,000-\$75,000	2
50-100	3	\$75,000-\$150,000	3
>100	4	<\$150,000	4

This information is applied to CSU's economic development attraction matrix, which converts these inputs into a single attraction score.

- The attraction score provides an objective, data-driven assessment of how attractive a project is to our community and utility system.

- Higher scores indicate greater overall value to Colorado Springs and CSU customers.
- This score is used solely as a decision-making tool to assess whether offering an incentive provides economic value to the community.

Importantly, this evaluation data is not contractual at this stage. Forecasts and projections inform the decision to offer an incentive, but they are not performance guarantees.

2. Customer accountability and enforceable commitments under economic development incentive contracts

Once an incentive is approved, a contract is created on a performance-based rate discount and additional requirements explicitly defined in the contract. Customer requirements are typically written around factors such as:

- Performance-based incentives are typically in the form of a rate discount per utility unit used. For example, \$0.01 discount per unit is \$10 for 1,000 units and \$100 for 10,000 units.
- Maintaining operations within CSU's service territory for the full contract term.
- Remaining an active CSU customer under approved service rates.
- Complying with CSU tariffs, rules, and regulations.
- Meeting agreed-upon administrative and billing requirements, usually AutoPay billing.

● Source: May 14, 2026 neighborhood meeting recording (~37:25). Quotes transcribed from the recording — verify against audio before publication.

Use tax: who actually collects on the equipment

The combined sales-tax rate is 8.2% — but use tax on the ~\$2–3B of servers doesn't split that way. Home-rule status is the key — and the applicant's own figures on the taxable base don't fully reconcile.

Jurisdiction	Rate	Use tax on the ~\$2–3B of servers?
City of Colorado Springs	3.07%	Yes — home rule. ≈ \$61–92M, one-time
State of Colorado	2.9%	Yes — but this revenue goes to the State. ≈ \$58–87M
El Paso County	1.23%	No* — construction materials & vehicles only
PPRTA (regional transit)	1.00%	No* — construction materials & vehicles only

*Colorado law generally limits county and special-district use tax to construction/building materials and motor vehicles. Home-rule cities can tax business equipment broadly — statutory counties and districts cannot.

GREEN'S FIGURES — AND THE CATCH

60% of the ~\$0.75–1B facility, and 85% of the ~\$2–3B equipment (5/14) — two different taxable fractions, both called “sales tax.”

But the \$2–3B is the tenant's GPUs, bought out of state (“out of Sunnyvale... our customer does”) — so it's use tax owed on delivery, if collected. Not the sales tax described.

No data-center exemption — HB26-1030 died (May 2026); nothing shields the equipment.

Recurring, not one-time: the servers are refreshed roughly every 3–5 years, so the City's equipment use tax repeats with each hardware generation, if the purchase structure keeps it local.

● Sources: City of Colorado Springs (home-rule sales/use tax, 3.07%); Colorado DOR (state 2.9%, El Paso County 1.23%, PPRTA 1.0%; combined 8.2%); C.R.S. 29-2-109 (county/district use-tax scope).

PART 09

Process



The City's own lobbyist, retained by the applicant

- Brownstein Hyatt Farber Schreck (BHFS), the City of Colorado Springs' own state and federal lobbying firm, was simultaneously retained by Raeden to build support for Project Taurus.
- Apr. 20: Brownstein's own General Counsel flagged the arrangement internally: the work “seems like lobbying, and also if the City is a client, like a conflict.”
- Apr. 21: Partner John Suthers (former Colorado Springs mayor and Colorado attorney general) asked Acting City Attorney Marc Smith for “the city's waiver of any actual or perceived conflict.”
- Apr. 24: Smith raised Council Rule 6-2(B) (no lobbying Council on pending quasi-judicial matters); Suthers agreed, but said he'd work with “governmental officials in the city outside the Council.”
- **Apr. 28: Smith granted the waiver six weeks before the June 11 approval: “The City hereby consents to the waiver with the limitations regarding adverse litigation.”**

“This project will almost certainly be approved administratively” despite “public opposition for all kinds of bizarre reasons.”

— John Suthers, Brownstein partner, internal email, Apr. 21, 2026

The project “will have a big impact on Space Force and defense contractors” and was “very much in the city's economic interests.”

— John Suthers, to Acting City Attorney Marc Smith, Apr. 22, 2026

Contacts with the City during the appeal window

- June 26 : Applicant's counsel convenes a “Legal Connect” Zoom with City Attorney Stefanie Boster. The agenda proposes “Standard of Review – limit the hearing to matters raised on appeal” and asks the City to confirm appellant standing, noting “we have a lot of out of town involvement here and need to confirm.”
- **Same period: Planning Director Kevin Walker sends applicant's counsel the City's draft hearing ground rules. The appellants did not receive those ground rules.**
- July 6–7: The M201 sheet dispute (previous slide) is forwarded to Senior Corporate Attorney Trevor Gloss — the same attorney who approved the Development Agreement “as to form.”

What this means: the applicant had a running, direct channel to City planning staff and the City Attorney's office throughout the appeal window including materials (the draft ground rules) that the residents who filed the appeal did not have.

PART 10

Closing

What's settled and what's still open

ESTABLISHED

- ✓ Scope is 50 MW critical / ~70 MW gross based on current hardware
- ✓ Water is near-zero on site: air-cooled (Vera Rubin), no evaporative assist
- ✓ Generators are 30 Tier 4 units, full state air permitting, 24-hr double-contained fuel
- ✓ No economic incentive: the EDSC was denied and CSU confirms no contract rate — stated on the record.
- ✓ CSU electrical revenue is real and ratepayer-protected: ~\$34M/yr at 50 MW under the ELL tariff.
- ✓ City use tax (3.07%) applies to the equipment; county and transit-district use tax do not.
- ✓ On A-weighting, the facility complies (~45 dBA, under the 50 dB night limit).

OPEN

- ❓ The site could be expanded, given appropriate investment. What will it look like in 5 years? In 10? Will more property be acquired to fit additional chiller / generator yards?
- ❓ Is the low-frequency content harmful? The model shows 61 dBC / a 16–21 dB C-minus-A gap
- ❓ Should COS adopt some sort of low-frequency adjustment.
- ❓ How is the 50 MW actually served? No LLSA or PPA is in place, and the three accounts of the power source conflict.
- ❓ Who buys the GPUs, and does the use tax land locally? Out-of-state purchase could shrink the tax.
- ❓ How many permanent jobs? The filing says as few as 20; Green said 60–100.
- ❓ Will Raeden sign a binding CBA: monitoring, low-frequency abatement, heat mitigation, a no-expansion covenant?
- ❓ No thermal-plume or winter-inversion study exists for the continuous ~55–70 MW of heat rejection.

A Community Benefit Agreement (Part 1)

OFFERED

already stated by Raeden

PARTIAL

partly offered — strengthen

NEW ASK

new

NEW ASK

SCALE 50 MW cap. No build beyond 50 MW critical without a new Development Plan, public notice, and renewed noise/heat studies — recorded as a covenant that runs with the land.

PARTIAL

NOISE Property-line monitoring. Now formalized: the City's 7/15/26 Sound Monitoring Plan requires ≥ 3 stations at the property line, continuous 24/7 logging on Class-1 (ANSI S1.4) meters, third-party calibration, and monthly public reporting via the entitlement record. Still missing: an explicit dBC (C-weighted) reporting requirement, and true real-time (vs. monthly) public data.

NEW ASK

NOISE Abatement trigger. If levels exceed set A/C limits at the line, applicant funds added abatement (silencers, active cancellation) — or curtails chillers at night.

NEW ASK

VIBRATION Infrasound isolation. Spring isolators and inertia bases with two-stage damping — chiller-to-frame and frame-to-ground — certified by an acoustical engineer.

OFFERED

WATER Relinquish the allocation. Formally give up the 1-MGD water allocation and covenant no adiabatic/evaporative cooling without review. (Raeden stated this on the record — bind it in writing.)

A Community Benefit Agreement (Part 2)

OFFERED	<i>already stated by Raeden</i>	PARTIAL	<i>partly offered — strengthen</i>	NEW ASK	<i>new</i>
NEW ASK	HEAT Heat-island mitigation. Measurable neighborhood investment — tree canopy, shade / solar-covered parking — plus a study of waste-heat reuse rather than rejecting it.				
NEW ASK	HEAT Thermal-plume study. Independent CFD thermal / plume modeling including the winter-inversion case, delivered before Council votes.				
NEW ASK	AIR Fenceline air monitoring. Continuous PM and NO _x monitoring at the property line with public data, given monthly generator testing and on-site diesel.				
NEW ASK	GOVERNANCE Citizen advisory group. Chartered for the life of the facility — quarterly meetings, access to monitoring data, and standing before Council.				
NEW ASK	COMMUNITY Quality of life. Local hiring and a community fund; dark-sky lighting at the residential edge; limited construction hours and truck routing.				
PARTIAL	ENFORCEMENT The teeth. A recorded agreement enforceable by the City and residents, a decommissioning bond, and real remedies — liquidated damages and mandatory curtailment — for breach. (Raeden offered to “put money behind it” — make it binding.)				

Caveats

- The three-tier labels: documented = on paper; analysis = math from the documents; open question = raised, not answered.
- Where I rely on inference , the makeup-water and decibel estimates, I've said so and shown the assumptions.
- **Corrections welcome. This is about the facts, not the verdict.**

Sources

- Permit DEPN-26-0039 · mechanical plan sheet M201
- Acoustic study DLAA 26-024 Rev. C · Hankard Environmental validation (6/1/26)
- Raeden CSU large-load submission (CORA) · CSU Electric Large Load (ELL) Rate Sheet (4/1/26)
- Colorado HB26-1030 record · COS use-tax rate
- Fountain Creek Watershed District · CSU water-use data · CSU spill record
- The six filed appeals (five accepted) · Raeden filings & releases · local press of record