MEMORANDUM

TO: Board of Trustees

THROUGH: Indra Winquest
District General Manager

FROM: Brad Underwood, P.E.
Director of Public Works

SUBJECT: Mountain Cart Path Informational Memo

DATE: November 10, 2021

The following information is provided to the Board in addressing a contract change approved by the Engineer/Owner.

Timeline

- *Specifications and Drawings titled "Mountain Golf Course Path" for bidding* were received from Design Engineer (Lumos) on July 21, 2021.
- The bid was setup for the Contractors to bid on two segments:
    - Base Bid to reconstruct the pathway along holes #3, #4, and most of #5 (Sta. 0+00 to Sta. 19+58 per Drawings).
    - Alternate Bid to reconstruct the pathway along the remainder of hole #5, holes #6, #7, and most of #8. *(Sta. 19+58 to Sta. 41+40 per Drawings).*

  The bidding was set up this way to ensure that some of the intended work could be awarded for construction as the Engineer's estimate totaled $684,916.54 (see attached - Lumos), which exceeded the construction budget for the project of $405,000.
- Public Works (PW) Staff Advertised for Bid on July 23, 2021.
- PW Staff held a Non-Mandatory Pre-Bid meeting on August 3, 2021, but no contractors attended. PW Staff was notified that a representative of MKD Construction was looking at the site later that afternoon.
- PW Staff received 5 questions during the bidding phase and an Addendum (prepared by Lumos) was issued on August 24, 2021 (no questions regarding the use Recycled Type I Base or request for additional subsurface reports).

- Bid opening was held on August 26, 2021 and two (2) bids were received. The Bids were opened and read aloud in front of PW Staff, representative of Cruz Construction and a representative of FW Carson. Both contractors submitted bids on both the Base Bid and Alternate Bid as set forth in the bid documents. PW Staff asked if FW Carson felt comfortable with their bid and they were. No protests were received within the 5 business days (as allowed for by NRS 338.142). FW Carson did not request to pull their bid within the 24 hours as allowed in the contract documents.
- The bids were reviewed and all documents and calculations were verified by PW Staff. The Board memo was finalized by inserting the bid results late in the afternoon on August 26, 2021 (to meet posting requirements for the Board Meeting on September 2, 2021).
- *August 31, 2021, Lumos added a note on the plans that provided earthwork quantities for both the Base and Alternate Bids. And also added the following:*
    1. *The Contractor anticipates pulverizing AC pavement and re-using as base material. Therefore, the anticipated haul-off volume is less than 50 cubic yards.*
    2. *Quantities listed on this sheet include all quantities for the entire project.*
    3. *All material that is not reused is to be hauled to 1064 Tahoe Blvd., Incline Village, NV 89451.*
- *August 31, 2021 to September 1, 2021, email exchange (attached) between FW Carson and Lumos on which IVGID PW staff was not included. Lumos was requested to initiate contact with the Contractor by IVGID PW staff to finalize the SWPPP document necessary for construction to begin.*
- A Construction Contract was awarded to the low bid, FW Carson (Contractor), by the Board of Trustees at the meeting of September 2, 2021. Both the Base Bid and Alternate Bid were awarded as the total of the two ($357,138.80) was lower than the project construction budget of $405,000.
- On September 7, 2021, a Purchase Order (PO) was created and fully approved on September 9, 2021 based upon the Board of Trustees approvals.
- A preconstruction meeting was held on September 8, 2021 with PW Staff, the Contractor, and Golf Staff). A request was made by the Contractor to get a copy of the geotechnical report. The geotechnical report was emailed to the Contractor on the afternoon of September 8,2021 (see attached email correspondence).

- On September 9/10, 2021, FW Carson verbally requested to use Recycled Type I Base per the geotechnical report (attached), bring in a pulverizing machine recycle material on-site. PW Staff spoke with Lumos, who concurred that Recycled Type I Base material was an acceptable alternative. PW Staff contacted Reno Tahoe Geo (Geotechnical Firm performing material testing) September 13, 2021 to advise them that Recycled Base was approved and they will need to obtain material samples to facilitate field testing.
- September 16, 2021, a Notice to Proceed was issued to the Contractor to begin the work.
- September 17, 2021, the Contractor mobilized to the site and began placing BMPs, and potholing.
- September 20, 2021, the Contractor mobilized the pulverizing machine.
- *October 7, 2021, meeting between PW staff and the Contractor to discuss the construction process:*
    - *The Contractor indicated that after the bid date but before the award of contract there was an email exchange between himself and Lumos (see above August 31, 2021 to September 1, 2021).*
    - *The Contractor said his bid was based upon the design as advertised in the plans and specifications.*
    - *TheContractor said from this email exchange, he assumed that he was being directed to do the work via pulverizing in place.*
    - *The Contractor indicated that there was no cost savings in performing the work by this means and method.*
- *October 12, 2021, meeting with Lumos to discuss the construction process:*
    - *Lumos was requested by PW staff to contact the Contractor directly to complete the efforts in obtaining the SWPPP for the project.*
    - *Lumos confirmed the email exchange after the bid date but before the award of contract between himself and the Contractor (see above August 31, 2021 to September 1, 2021).*
    - *Lumos stated from this email exchange that he thought the Contractor was requesting to perform the work with an alternate means and methods of pulverizing in place.*
    - *Lumos stated that the result of pulverizing in place yielded an equivalent end product as long as the specifications were met, i.e. materials testing.*
- *October 26, 2021, meeting with Lumos (Design Engineer and Engineering Manager) to discuss project:*

- *The Engineering Manager confirmed that IVGID should have been included on the email correspondence prior to awarding the Contract.*
- *The Engineering Manager stated that since they were not contracted to provide construction services they did not know what transpired after this email exchange.*
- *The Engineering Manager stated that Lumos would provide a summary of the project construction with information on the construction method (attached).*

Changes to Work/Amending the Contract

The Engineer and/or Owner have the right to authorize changes of work per the contract documents. Which changes are to be documented as amending the contract. This is supported per the following contract document excerpts:

Section 9

- *Article 10.04 Engineer's Authority – Article 10.04.D – Engineer's authority as to changes in the Work is set forth in Article 11.*
- *Article 10.06.A – Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work.*
- *Article 11.01 Amending and Supplementing the Contract – Article 11.01.A – The Contract may be amended or supplemented by Change Order, a Work Change Directive, or a Field Order.*
- *Article 11.03 Work Change Directives – Article 11.03.A – Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or ….*
- *Article 11.04 Field Orders – Article 11.04.A – Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order*

and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.

- *Article 11.05 Owner-Authorized Changes in the Work – Article 11.05.A – Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.*
- *Article 11.05.B – Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon ….*

As detailed in the timeline above, the PW Staff met the requirements that are outlined specifically in these referenced sections of the contract documents. The PW Staff is currently working to finalize the appropriate change order to reflect the approval of using recycled base as agreed to with the contractor.

Revised Work

- From conversations with previous engineering staff as well as golf staff, a major concern with golf cart path replacement projects is the damage to the existing turf and irrigation system components that occur during construction. In observing the contractor's method of utilizing a pulverizing machine, very little damage to the adjacent turf and irrigation system components was observed. In fact, to date only one (1) un-marked irrigation box was damaged as part of the installation of rip rap.
- The pulverization method reduced the amount of heavy equipment (loader, dump truck, backhoe) trips that were required in a one-way-in/one-way-out travel path; which in turn reduced the amount of damage to adjacent turf and irrigation system components as stated above.
- Recycled Type I Base is used throughout the construction industry in roadway construction and is a sustainable product. The sustainability aspects are the re-use of existing on-site materials and less trucking activity resulting in less traffic impacts, less resources used and less impacts to greenhouse gas.
- The recycled materials were tested by Reno Tahoe Geo to ensure specifications of the Standards of Public Works Construction (Orange Book) were met as required by the contract documents, and any identified

unsuitable material was removed and replaced per the project plans and specifications.

- Material testing frequency recommendations are included in the Standards of Public Works Construction. The testing frequency was met or exceeded by Reno Tahoe Geo.
- Based on the end product, PW Staff will be evaluating whether this method should be preferred over removal and replacement for future phases of the work.

Opportunities for Improvement

- Include within the Contract Documents, any report associated with the project that is pertinent in developing the project documents (i.e. geotechnical, environmental, historical, etc.).
- Review timeframes for execution of the contract and make improvements to contract processing.
- Develop a process to ensure contract documents are fully executed prior to issuing a notice to proceed to the contractor.
- Follow up verbal changes/directives with written documentation in a timely manner.
- Initiate internal design review meetings at critical points (i.e. 60% and 90%) in the project design process.

Troy Carson

From: Justin Sand, P.E. <jsand@LumosInc.com>
Sent: Wednesday, September 1, 2021 12:27 PM
To: Troy Carson
Subject: RE: IVGID Golf Course Path

Sounds good to me. Thanks Troy.

Justin Sand, P.E.
Project Manager
Engineering Division
P.O. Box 3570, 225 Kingsbury Grade
Stateline, NV 89449
775.588.6490
jsand@LumosInc.com

From: Troy Carson <troy@fwcarsonco.com>
Sent: Wednesday, September 1, 2021 12:24 PM
To: Justin Sand, P.E. <jsand@LumosInc.com>
Subject: RE: IVGID Golf Course Path

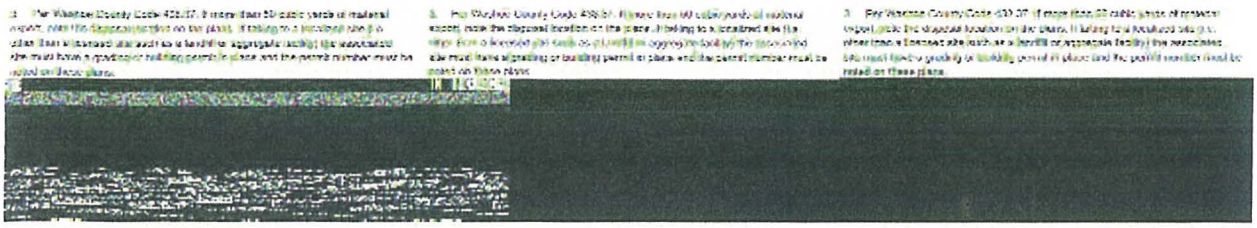
Hey Justin,
Yes we will still plan on pulverizing in place so long as we agree on the means and methods to achieve finish grades and compaction.
Compliance with the county comment is noted.

From: Justin Sand, P.E. <jsand@LumosInc.com>
Sent: Wednesday, September 1, 2021 12:21
To: Troy Carson <troy@fwcarsonco.com>
Subject: RE: IVGID Golf Course Path

Troy,

Just following up as it pertains to permitting requirements....with the information I provided, would you still plan to pulverize in place?

We will need to comply with this comment from Washoe County, so pulverizing in place may help in this circumstance:



Justin Sand, P.E.
Project Manager
Engineering Division
P.O. Box 3570, 225 Kingsbury Grade
Stateline, NV 89449
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jsand@LumosInc.com

From: Justin Sand, P.E.
Sent: Tuesday, August 31, 2021 2:58 PM
To: Troy Carson <troy@fwcarsonco.com>
Subject: RE: IVGID Golf Course Path

Troy,

Thanks for the follow up. The applicable section from the geotech investigation addressing your question is below. The full report is attached for reference. Please let me know if additional clarification is needed.

Section taken from Geotech Report:

PAVEMENT DESIGN

The pavement structural section was determined for the asphalt concrete utilizing an R value of 51 for the native silty sands (laboratory test results) and an R-value of 70 for the aggregate base course, (Standard Specifications for Public Works Construction (SSPWC)). Refer to Table 2, "Recommended Asphalt Pavement Section". We recommend removing the upper seven (7) inches of asphalt and underlying soil to allow for the recommended asphalt and Type 2, Class B aggregate base to be placed. The area exposed should be scarified in place to a depth of at least 12 inches, particles larger than three (3) inches removed, moisture conditioned to within two percent (2%) of optimum, and compacted to at least ninety percent (90%) of ASTM D1557. Aggregate base should consist of Type 2, Class B material and meet the requirements of the SPPWC. The existing asphalt, base, and/or decomposed granite may be pulverized and reused as aggregate base, provided it meet the requirements of Type 1 Recycled Aggregate Base. Aggregate base material (Type 2, Class B or Type 1 Recycled) should be compacted to at least ninety-five percent (95%) of the laboratory maximum density as determined by the ASTM D1557 standard.

Continued...

Table 2
Recommended Asphalt Pavement Section

	Minimum Asphalt Pavement Thickness	Minimum Aggregate Base Thickness	Properly Prepared Suitable Subgrade
Cart Path	3"	4"	2"

The recommendation for the three inches of asphalt is to help mitigate against the heavy freeze thaw cycles that happen in this area and the four inches of aggregate base is to help maintain a way in which water can move under the path and not pool up to help with the fatigue cracking.

The asphalt concrete shall contain PG64-28NV oil and Type 3 asphalt aggregate per the SSPWC. We recommend a 50-blow Marshall mix that targets three percent (3%) air voids. Asphalt concrete, placed in cart paths, should be compacted to between ninety-three percent (93%) and ninety-eight percent (98%) of the Rice theoretical maximum density.

All mix designs for asphalt concrete should be submitted to the Geotechnical Engineer for review and approval a minimum of seven (7) days prior to paving.

...End of section in Geotech Report

Thank you,

LUMOS & ASSOCIATES

Justin Sand, P.E.
Project Manager
Engineering Division
P.O. Box 3570, 225 Kingsbury Grade
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775.588.6490
jsand@LumosInc.com

From: Troy Carson <troy@fwcarsonco.com>
Sent: Tuesday, August 31, 2021 1:24 PM
To: Justin Sand, P.E. <jsand@LumosInc.com>
Subject: IVGID Golf Course Path

Hey Justin,
Got a message from our office regarding the path project.

Maybe some question....

where are we taking the material- ?
FW Carson Co.- 1064 Tahoe Blvd. Incline Village, NV 89451 or out of the basin.

On-Site emergency contact info.-
Troy Carson 530.214.6273
Doug Whipple- 415.521.0586

Let me know what else you may need.

Additionally,
We would like to discuss with you option to pulverize the existing AC and base in place. We would then process, regrade and recompact. This would drastically reduce the disturbance of adjacent improvements and reduce traffic impact on the project and neighborhood.

Thanks,
Troy Carson

LUMOS & ASSOCIATES

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November 2, 2021
Via email: ksn@ivgid.org

Kate Nelson
Incline Village GID
Public Works Department
1220 Sweetwater Road
Incline Village, NV 89541

Subject: ***IVGID Mountain Golf Course Cart Path Reconstruction - Phase 1 Construction Methods Review***

Dear Kate:

Lumos and Associates, Inc. is providing this letter to Incline Village General Improvement District (IVGID) as a response to questions by the IVGID board regarding whether there was any issues of bid impropriety, questions regarding the construction methods/materials, and whether there are modifications to the process of bidding/construction management that could result in a more clear portrayal of how the activities will be completed to alleviate misunderstandings and improve communication.

First in terms of bid impropriety, we can unequivocally say that we did not witness nor have any knowledge of any impropriety or any advantage given to any contractor during the bid process. Only two bids were received for the project. Both contractors had access to the same bid documents and no communication or direction that could give one or the other an advantage prior to submitting their bids was provided by Lumos. Communication between Lumos and the awarded contractor regarding inquiries regarding means and methods occurred post bid submittal; therefore, the awarded contractor could not have changed or modified his bid based on said communication.

Next, in regards to construction methods and materials, it is our understanding that there is concern that the "design" changed after the bidding process and IVGID received a substandard product due to changes in means/methods/materials through the use of recycled asphalt base material. The design of the project is based on material qualities, thickness, and completed facilities. The design does not dictate means and methods. In terms of the bid documents the design intent of the project is described as:

> *The Base Bid scope of work includes reconstruction of approximately 15,320 SF of existing asphalt pavement and base along a portion of the IVGID Mountain Golf Course cart path. The Alternate Bid Schedule includes an additional 12,888 SF of asphalt pavement and base reconstruction, as well as 3,688 SF of 3" asphalt pavement surface replacement.*

The Drawings provide details for two repair methods, one requiring replacement of the existing asphalt and base section, the other only requiring reconstruction of the asphalt surface. These items of work are described in the Bid Item Clarification section of the Contract Documents as:

Method 1: *Full Depth AC Pavement & Base Removal* and *New Full-Depth AC Pavement Section*
Method 2: *Remove Asphalt Surface* and *New 3" Asphalt Surface*.

The Bid Item Clarification descriptions identify items that the contractor shall include in his pricing of each bid item. The descriptions call for the removal and replacement of the existing asphalt pavement and base material, where applicable, to provide the pavement sections shown on the Drawings.

In coordination with Lumos and IVGID staff, F.W. Carson requested if pulverizing the existing asphalt and base in place and using recycled asphalt material as base material would be acceptable for the project. F.W. Carson was referred to the section of the Geotechnical Report prepared for the project that addresses this question. The section applicable to the use of recycled base states the following:

> *" an R-value of 70 for the aggregate base course.... The existing asphalt, base, and/or decomposed granite may be pulverized and reused as aggregate base, provided it meet the requirements of Type 1 Recycled Aggregate Base..."*

F.W. Carson proceeded with the understanding that pulverizing and recycling the existing asphalt surface was an acceptable method of construction if they were able to condition the recycled asphalt to meet the specifications of Orange Book Type 1 Recycled Aggregate Base and meet an R-value of 70.

Lumos & Associates designed the proposed pavement section based on a resistance value, or "R-value," of 70 for the aggregate base course. The R-value indicates the ability of a material to resist lateral spreading due to an applied vertical load, which indicates structural integrity. Orange Book Type 2, Class B and Type 1 Recycled Aggregate Base both provide a minimum R-value of 70. Therefore, there is no structural difference between the two materials and both meet the design for the project. The use of one base material versus the other did not change the design. These two base materials are used interchangeably on public works projects throughout the region as well as nationally.

Based on the information provided above, the resulting finished product in the field was in compliance with the geotechnical report and Standard Specifications for Public Works Construction requirements for recycled materials. Therefore, using a recycled asphalt aggregate base for the pavement section did not change the design and provides a final product of equal quality as importing a "new" Type 2, Class B aggregate base. IVGID received a quality product meeting the design.

Pending final negotiations, the final project price, including Change Orders #1, 2, and 3 is anticipated to be $380,919.17, as opposed to the Engineer's Opinion of Probable Cost of $684,916.54 for the Base and Alternate Bid Schedules that was generated prior to bidding. The bidder implication for pricing on the project is the proximity of F.W. Carson's staging yard and their ability to recycle aggregate at the yard. These two factors allowed them to bid lower than other bidders for this project by eliminating the need to haul any material out of the Tahoe Basin regardless of whether recycled pulverizing was used or not. For this reason, we feel that IVGID received a quality final product for a competitive price in an otherwise inflated construction market, saving approximately $290,000 from the other bid that was received.

All these things being said, if desired we can work with staff to come up with additional processes/steps to ensure more information is available with future phases. Some options to improve the process moving forward would be:

- Bid multiple bid alternatives for specific means and methods (ie. Bid pulverizing as an alternative to remove and replace).
- Engage in further pre-bid coordination meetings with contractors to elicit further questions and addenda to clarify the project further.

In summary, IVGID has received a quality project constructed in conformance with standards, which was obtained through a bid process compliant with all standards. If there are ways to help improve the process in future phases based on feedback from IVGID staff and board we are more than happy to help modify and adjust to improve.

Please do not hesitate to call me if you have questions.

Sincerely,

Justin Sand, P.E.
Senior Project Manager – Engineering

Tim Russell, P.E.
Director - Engineering