2019-10-15 Addendum#1 George

Terry George

7825 South 2000 East

South Weber Utah

Comments for record at city council meeting 15 October 2019

I'd like to take a quick trip down memory lane. On 5 September, 1986 I began my 32 years of service to this great nation by joining the United States Air Force. I took a solemn oath to support and defend the constitution of the United States; an oath I took with great pride and with great humility... An oath and commitment of service to my fellow Americans and our way of life. It was truly one of the greatest days of my life!

Honorable Mayor and Council members, I imagine you too felt the same way when you took your oath of office. You too made a commitment to support our Constitution and serve this community. You were placed here by our voice; the peoples voice, and it is that voice you should be intending to serve.

Our constitution was not written to restrain the citizen's behavior, but rather it was written to restrain and confine the government's behavior. In both our cases our oath was to the constitution. The first line in the Constitution is "We the people." Our oaths are a commitment of loyalty to "The People."

Mayor, you have mentioned on a few occasions that you feel there is a divide in our community over the last few month's events. I whole heartedly agree. The two biggest issues that have caused this divide in our community are the LOFTS, and the South Bench Drive connection to Layton. Where we differ on this "division" in our community is I believe you believe it is a division between the citizens. I assert it is a division between the citizens and our elected and appointed officials. It is a division between "we the people" and you the elected and that division is a direct result of you allowing the Lofts to happen and your tenacious persistence to pursue and push South Bench Drive, the connection to Layton, down our throats.

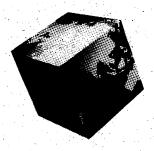
We the people DO NOT WANT THE ROAD TO LAYTON, THE SOUTH BENCH DRIVE PLAN, OR ANY OTHER PLAN THAT CONNECTS US TO LAYTON. On the city's General plan survey 197 Citizens Disagreed with a road to Layton. That is 61% of the people who did the survey. In contrast only 35% of those surveyed Agreed with the plan. A total of 326 answered the question, and 197 said "NO!" to the road. And yet, our beloved Mayor continues to push it down our throats with a common themed response of "It's what's best for the city." We the people are the city. We need you to do our desire not your desire.

I believe the vast majority of this community do not want this Road to Layton in any shape size or form. We want it wiped from our minds, from out plans and from our future. So, to that end, I have one question for the mayor and the council: What will it take for you, our elected to stand with us your people, and put an end to this worthless pursuit and cease and desist on all fronts? What will it take for you to be our servants and representatives and do what WE THE PEOPLE want? Tell us what it will take for we are committed to remind you it is our will, not your will the must be done.

Thank you for your time, and may God bless us all!

Cc 2019-10-15 Add endum #2 Layton

SOUTH WEBER CITY 1600 East South Weber Drive South Weber, UT 84405



Preliminary Slope Assessment Report Davis Landfill Davis County, Utah

IGES Job No. 00169-034

May 5, 2005

Prepared for:

Wasarch Integrated Waste Management Dist, 650 East Highway 193 Layton, UT 84041

South Weber City 1600 E. South Weber Drive South Weber City, UT 84405 South Weber Water Impvt. Dist. 1716 East 7650 South South Weber City, UT 84405

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Preliminary Slope Stability Analysis

(Near the Cedar Bench Subdivision, South Weber)

Scope of Work

IGES was retained by Wasatch Integrated Waste Management District, the City of South Weber and South Weber Water Improvement District to perform a preliminary slope stability analysis on the soil slopes above the Cedar Bench subdivision in South Weber. The recent precipitation coupled with a wet spring has introduced water into the near surface soils and caused some of the soil to mobilize. The preliminary slope stability analysis included the following activities to help assess the nature of the slopes movement:

- Survey Support
- Air Photo Analysis
- Geologic Assessment
- State of Utah Interaction
- Engineering Analysis

Survey Support

Eight survey points were established on the slope between the crest of the slope and the houses in the Cedar Bench subdivision. The survey control points were set on March 1, 2005 in areas of the slope proximate to areas thought to be moving to characterize the magnitude of slope movement (if any). The location of the survey control points relative to the irrigation pond and the Cedar Bench subdivision are as illustrated on Figure A1 – General Arrangement

Survey control point # 64 had measured displacement the week of 3/15/05 but stabilized on all other readings. Survey control point # 66 had measured displacement on 3/30/05, 4/5/05, and on 4/12/05. A summary of the survey control points is presented as Table A1 – North Slope Monitoring Points.

Air Photo Analysis

Historic air photographs were analyzed to help evaluate historic land movement and assess the construction methodology of the irrigation pond. 13 air photos dating from 1966 to 2004 were utilized in the air photo analysis. The analysis of the photos indicated that there have not been noticeable slope failures in the time frame of the photos and that some of the cut soils from the pond construction were spoiled downslope. Figures B1 through B4 shows the area of interest from 1974 to 2002.

Geologic Assessment

The recent movement of the slope is not the first observed movement since the subdivision was constructed. The UGS has observed the slope on another occasion during 1998.

The slope in question was observed by several engineers and geologists from IGES, South Weber, Wasatch Integrated, and the State of Utah (Utah Geological Survey (UGS) and State Engineers Office). Based upon their site visits; the UGS has issued a technical report on the slope failure. Copies of the initial UGS letter as well as the most recent technical report are included in Appendix C.

State of Utah Interaction

Part of the preliminary slope stability assessment was to confer with various State agencies (UGS, Utah State Engineers Office, and the Division of Solid and Hazardous Waste) to determine the level of State involvement necessary (if any at all). In addition to notifying the agencies, slope stability modeling parameters as well as seismic design criteria were discussed and ultimately utilized in the engineering analysis performed by IGES.

Engineering Analysis

Slope stability analysis was completed for the critical section extending through the existing irrigation reservoir north towards the subdivision. The analysis was performed with the software PCSTABL7 version 2.002 using the Bishop's method of slices option for the computations. Soil strength parameters used in the analysis were inferred from values obtained by IGES on other areas of the Wasatch Integrated site. Water levels were obtained from nearby wells (MW-7). High water elevations from 2004 suggest this elevation to be 4706 feet. No additional

	information regarding water level north (down slope) of MW-7 was available at the time of this
	report. However, there are several locations of vegetation on the slope indicating near surface
	moisture. The general geometry of the slope was obtained from CADD drawings provided by
	Wasatch Integrated.
7	Additional information regarding the subsurface lithology was available from the initial reservoir
	construction documents, monitor well construction, and the 1993 Huntingdon Chen-Northern
	geotechnical report (dated October 1993, located in the Appendix) addressing slope stability for
	the Cedar Bench development below the reservoir. Figure D1 is a plan view of the reservoir and
	associated slope showing the location of the cross section utilized in the slope stability
٠ ال	assessment. Figure D2 is a cross section showing the previously mentioned lithology
	descriptions plotted on the cross section through the slope where movement has been observed.
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	No information was found suggesting stiffer and more competent materials with depth; therefore,
.	the stability modeling used one soil type to represent the entire slope with depth. This
	assumption appears reasonable due to the shallow failure surfaces (typically less than 20 feet)
,	obtained from the models and correlates with the observed movement of the slope.
	Due to the limited site-specific information, a sensitivity approach was used to assess the
	stability of the slope. The sensitivity covered a range of potential scenarios and parameters that
	may realistically represent the current and future conditions and forces the slope may experience
	including:
]	• Groundwater – The slope stability was computed using the 2004 high water level
	from the MW-7 well and neglecting any pore pressures within the model.
	Soil strength parameters – a sensitivity analysis of the soil strength was
	considered
	Static Stability Analysis
	The slope stability sensitivity modeling suggests the static factor of safety ranges from a low of
	0.51 to a high of 1.1. The results from the modeling are significantly less than a factor of safety
	of 1.5 which is the typical minimum industry standard recommended for the stability of natural

Page 3

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	slopes. Based on the stability modeling combined with the survey data and field observations, i
7	is our professional judgment the overall existing factor of safety of the slope is significantly less
J	than 1.5, and therefore the slope is not stable under current static conditions. Figures D3 and D4
	show the failure planes and factors of safety associated with static conditions.
	Several of the backyards extend into the existing slope with cuts up to 20 feet in height. No
	detailed survey data was available for this preliminary assessment. Therefore, our modeling dic
	not consider these cuts into the slope. These cuts would likely result in lowering the factor of safety even further.
	Seismic Stability Analysis
	The proximity of the reservoir near the crest of the slope raises some issues regarding the
	potential hazard to the homes below. Specifically, the hazard associated with a seismic event
	(while the reservoir is full) and the potential for the reservoir to breach. Because of the size of
J	the reservoir and the nature of construction (it is constructed below the ground surface) the
	structure may not fall under the jurisdiction of Utah Dam Safety but may still be under the
1	purview of the State Engineer's Office (because it is a water conveyance structure). Due to the
	potential for property and life loss, IGES performed the preliminary seismic assessment of the
J	site following the "State of Utah Statutes and Administrative Rules for Dam Safety" Sections
	R655-11-5 and R655-11-5A.
	In assessing the site-specific seismic hazard for this site, a deterministic evaluation of peak
	ground acceleration attributed to a maximum credible earthquake associated with the Wasatch
	Fault was considered. The anticipated moment magnitude associated with this segment is 7.15.
	The distance from the site to the Weber section of the Wasatch Fault is approximately 3.5 km.
	Three normal faulting attenuation relationships were considered in the deterministic evaluation
	of peak horizontal ground acceleration at the site (Campbell, 1997; Abrahamson and Silva, 1997;
<u>_i</u>	Boore, Joyner and Fumal 1997). The mean plus one standard deviation values from each
	relationship were computed and averaged to obtain a peak ground acceleration of 0.698g. Based

	on this information the Maximum Credible Earthquake (MCE) for the site was assigned a value
	of 0.698g.
,	The Operational Basis Earthquake (OBE) was also considered for the seismic stability analysis.
	Personal communication with Brett Dixon (2005) from the State Division of Water Rights, Dam
	Safety Division suggested using the 10PE50 (10% chance of exceedance in 50 years; return
	interval of 500 years) ground motion available from the USGS website. Based on this
	information the Operational Basis Earthquake (OBE) for the site was assigned a value of 0.21g.
	The stability modeling was performed using a pseudostatic approach, considering the potential
	failure surfaces extending from near the toe of the slope back into the reservoir. The stability
	modeling was limited to this area since the static stability discussed previously indicated factors
	of safety less than 1.0. Static factors of safety along these potential surfaces, extending back into
	the reservoir, ranged from 1.5 to 1.7.
	According to Section R655-11-5C of the State of Utah Statutes and Administrative Rules of Dam
	Safety: "For a maximum acceleration of 0.2g or less, or a maximum acceleration of 0.35g or
	less if the embankment consists of clay on a clay or bedrock foundation, a pseudo-static
	coefficient which is at least 50 percent of the maximum peak bedrock acceleration at the sit
	should be used in the stability analysis. The minimum factor of safety in an analysis should be
	$I.0^{\circ}$, which is the state of the first state of the
	Using this guideline the minimum factor of safety under the OBE ground motion should be a
	minimum of 1.0. The slope stability sensitivity modeling suggests the factor of safety ranges
	from a low of 0.97 to a high of 1.26. These results indicate the slope may not meet the State of
	Utah Statues minimum requirements for the OBE ground motion if the statues are applicable.
	For the MCE ground motions the State of Utah Statutes and Administrative Rules of Dam Safety
	requires a minimum factor of safety of 2.5 against overtopping, which requires a deformation and settlement analysis. Due to the preliminary nature of this analysis a simplified screening

٠,٠٠	approach was used in lieu of a site specific detailed deformation and settlement analysis which
7	would require detailed geologic and subsurface geotechnical information.
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	The recommendations given by Hynes-Griffin and Franklin (1984) were used as a screening too
J	in considering the stability and potential deformation under seismic conditions. Due to the
	preliminary scope of this project, only the peak ground acceleration was considered in the
	seismic stability, and therefore no reduction in soil strength was considered. Based on the
	materials observed on site it is likely the soil strength would need to be reduced by 20% prior to
. ل	performing the seismic analysis as part of a more detailed study.
	The results from this simplified analysis resulted in factors of safety ranging from 0.59 to 0.78
	and there is a potential for excessive deformation of the reservoir under MCE ground motions.
	The magnitude of deformation is anticipated to be much greater than 3 feet and may be up to 11
	feet, however based on the limited data and simplifying assumptions used in the modeling this
	value may be significantly different and would require a more detailed site specific study
	including detailed geologic and subsurface geotechnical information to provide a more defined
-	estimate of the anticipated deformation of the reservoir under MCE ground motions. Based on
	this information it is our judgment that the slope is not stable under seismic conditions and there
-	is high risk associated with the potential breach of the reservoir located on the crest of the slope.
	Figures D5 – D8 show the failure planes and factors of safety associated with seismic conditions.
. 7	Summary
	The results of this preliminary slope stability assessment indicate that:
7	The results of this premimary slope stability assessment indicate that.
	1) The existing slopes above the Cedar Bench subdivision are experiencing failure (having
7	static factors of safety less than 1). These slope failures are placing the houses near the
J.,	toe of the slope at elevated risk.
]	2) There is a substantial risk associated with the stability of the hillside and the potential
	for breach of the reservoir (while full) under seismic forces

Due to the physical constraints on the property and the proximity of the hazard to residential development, options for slope mitigation are limited. The observed static slope failure cannot

be rectified by additional field investigations or modeling; the slope is too steep. The following summarizes the actions that can be taken to increase the projected seismic factors of safety or reduce the potential hazards associated with the slope:

- Site-specific data could be generated based upon an extensive field exploration program. The site-specific data would need to include the geotechnical logging of several borings (to determine the lithology beneath the pond) as well as the installation of piezometers to more closely define the ground water across the site. Additionally, inclinometers could be installed at the site to assess the depth of slope movement.
- Based upon the sensitivity analysis performed as part of the static stability analysis; it is very unlikely that soils with the required strength characteristics will be encountered at the site to provide adequate factors of safety. The realistic lack of such high strength soils would prevent this option from generating acceptable factors of safety.
- Since several of the homeowners have cut into the toe of the slope (further undermining the slope stability) to develop the backyards; reinforcing the toe of the slope is problematic due to the proximity of the houses.
- Reducing the steepness of the slope. The option that remains is to reduce the steepness of the slope by regrading the top of the slope. Regrading the slope would most likely involve removal or reconfiguration of the existing pond.

Limitations

The recommendations contained in this report are based on our limited review of aerial photographs, construction documents, prior field explorations, prior engineering analysis, and recent site surveying. If any conditions are encountered at this site that are different from those described in this report, IGES should be immediately notified so that we may make any necessary revisions to recommendations contained in this report.

This report was prepared in accordance with the generally accepted standard of practice at the time the report was written. No warranty, expressed or implied, is made.

 References Abrahamson, N.A. and Silva, W.J. (1997), Empirical Response Spectral Attenuation Relations for Shallow Crustal Earthquakes, Seismological Research Letters - Volume 68, Number 1, SSA, pp. 94-127. Boorc, D.M., Joyner W.B., and Fumal T.E. (1997), Equations for Estimating Horizontal Response Sepectra and Peak Acceleration from Western North American Earthquakes: A Summary of Recent Work, Seismological Research Letters - Vol. 68, No.1, SSA, pp. 128-153 Campbell, K.W. (1997), Empirical Near-Source Attenuation Relationships for Horizontal and Vertical Components of Peak Ground Acceleration, Peak Ground Velocity, and Pseudo-Absolute Acceleration Response Spectra, Seismological Research Letters - Vol. 68, No.1, SSA, pp. 154-179. Huntingdon Chen-Northern (1993), "Report of Slope Stability Analysis Cedar Bench Development South Weber City Subdivision" Weber County, HCN Report No. 52-154-93. Hynes-Griffin, M.E., and Franklin, A.G. (1984), "Rationalizing the seismic coefficient method." Miscellaneous paper GL-84-13, U.S. Army Corp of Engineers Waterways Experiment Station, Vicksburg, Mississippi, 22 pp. Utah Division of Water Rights Dam Safety Section (2005), "Requirements for Operational Dams" Salt Lake City, Utah, URL: http://www.rules.utah.gov/publicat/code/r655/r655-012.htm#T1 	is each client's respon	nsibility to see that a	all parties to the project	are made aware of this repo
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Miscellaneous paper GL-84-13, U.S. Army Corp of Engineers Waterways Experiment Station, Vicksburg, Mississippi, 22 pp. Utah Division of Water Rights Dam Safety Section (2005), "Requirements for Operational Dams" Salt Lake City, Utah,				
Dams" Salt Lake City, Utah,	Miscellaneous paper	GL-84-13, U.S. An	, ·	
	Dams" Salt Lake Ci	ty, Utah,		



Prepared for:

Wasatch Integrated Waste Management District

650 East Highway 193, Layton, UT 84041

South Weber City

1600 East South Weber Drive, South Weber City, UT 84405

South Weber Water Improvement District

1716 East 7650 South, South Weber City, UT 84405

IGES Job Number: 00169-034

Preliminary Slope Assessment

Davis Landfill
Davis County, Utah

Prepared by

Ryan Thomas Cole, Ph.D., P.E.

Jan Mones Co

Reviewed by

Brett Mickelson, P.E.

Principal

IGES, Inc.

4153 South Commerce Dr.

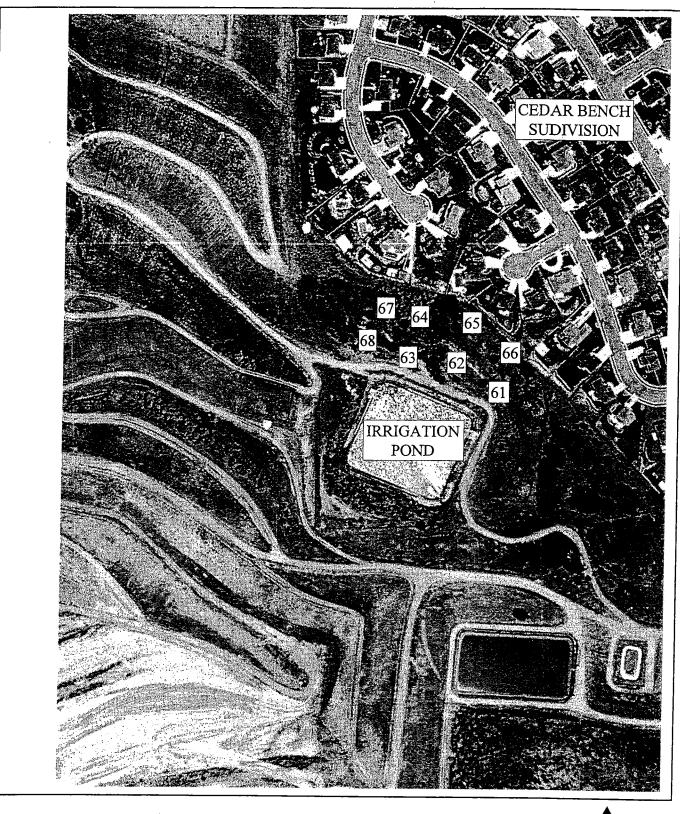
Salt Lake City, Utah 84107

(801) 270-9400

May 5, 2005

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RYAN THOMAS COLE COLE 368476





Date of Aerial Photo: 2004

Project Number - 00169-034

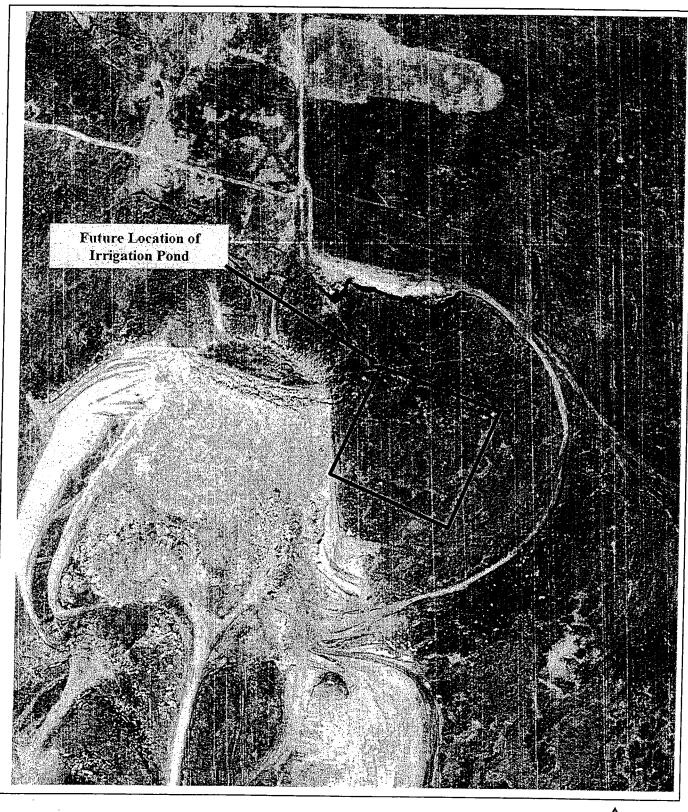
Slope Stability Investigation WIWMD Davis Landfill North Slope Layton, Utah

GENERAL ARRANGEMENT



FIGURE

A-1





Date of Aerial Photo: 1974 Project Number - 00169-034 Slope Stability Investigation WIWMD Davis Landfill North Slope Layton, Utah

AERIAL PHOTOGRAPH



FIGURE



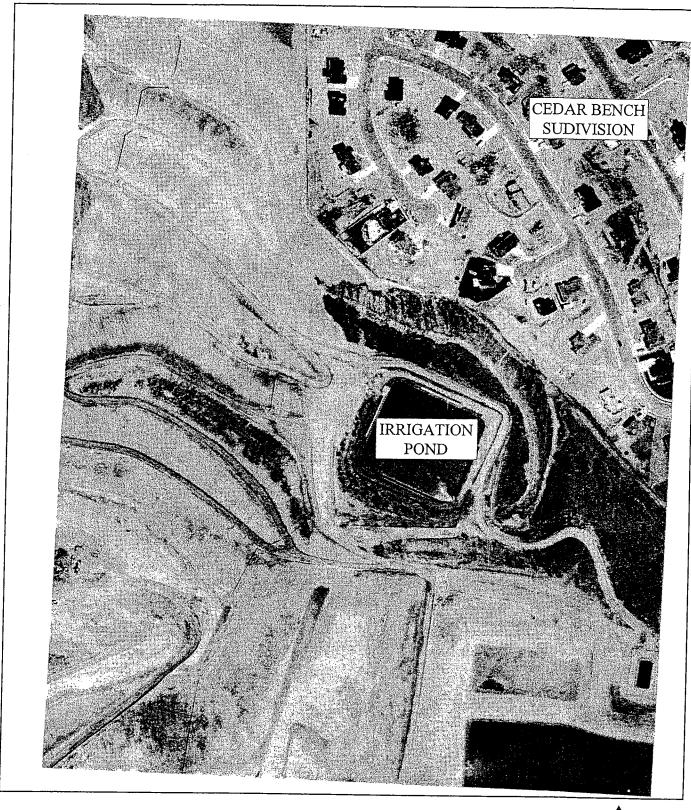


Date of Aerial Photo: 1982 Project Number - 00169-034 Slope Stability Investigation WIWMD Davis Landfill North Slope Layton, Utah

AERIAL PHOTOGRAPH



FIGURE



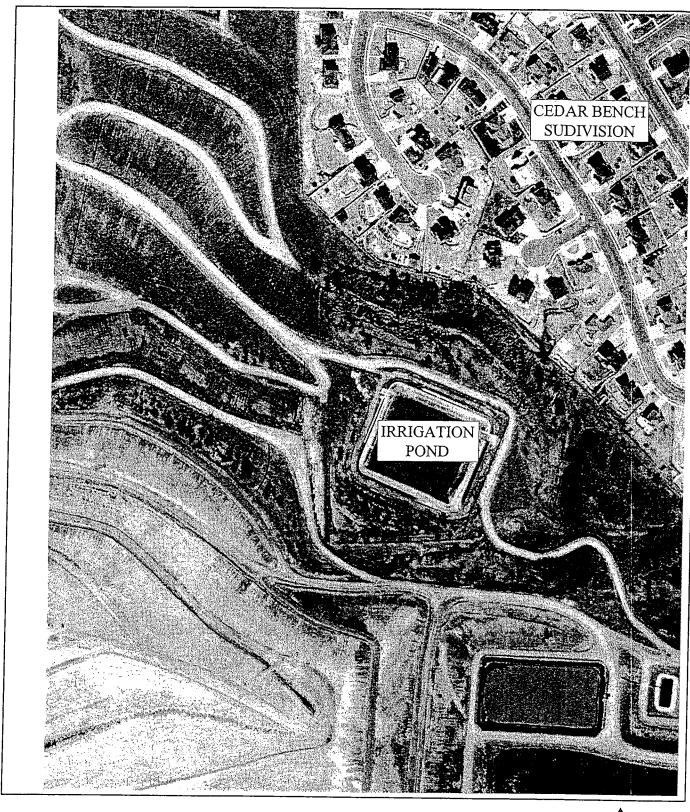


Date of Aerial Photo: 1997 Project Number - 00169-034 Slope Stability Investigation WIWMD Davis Landfill North Slope Layton, Utah

AERIAL PHOTOGRAPH



FIGURE





Date of Aerial Photo: 2002 Project Number - 00169-034 Slope Stability Investigation WIWMD Davis Landfill North Slope Layton, Utah

AERIAL PHOTOGRAPH



Plate

٠.	Project:	Utah Geol	ogical Survey			
	Reconnaissance of a landslide ne Utah	Requesting Agency: South Weber City				
	Barry J. Solomon	, Date: 5-21-98	County: Davis	Job No:		
	USGS Quadrangle: Kaysville (1320)		Number of attachments:	98-14 (GH-4)		

INTRODUCTION

At the request of South Weber City, through Fred May, Utah Division of Comprehensive Emergency Management (CEM), I conducted a reconnaissance on April 24, 1998, of an active landslide near the Cedar Bench subdivision, South Weber, Davis County, Utah. The landslide is located in the SW1/4SW1/4 section 35, T. 5 N., R. 1 W., Salt Lake Base Line and Meridian (attachment 1). I was accompanied by Fred May, Steve Anderson (Hansen, Allen, & Luce, Inc., consulting for South Weber), Bob Fowler (CEM liason officer to Davis County), Mark Larsen (South Weber building inspector), Brian Law (Davis County Emergency Coordinator), and Bob Rasely (U.S. Natural Resources Conservation Service). According to Mr. Larsen, the landslide moved the week of April 12, likely triggered by heavy precipitation, but the movement was only the latest episode of recent activity. The purpose of my investigation was to determine the physical characteristics of the slide and evaluate its hazard potential. As part of this investigation, I revisited the site on April 29 with Utah Geological Survey (UGS) geologists Francis Ashland and Bill Black, Mr. Larsen, Mr. Law, and Barry Burton, Assistant Director of the Davis County Department of Community and Economic Development.

PHYSIOGRAPHY AND GEOLOGIC SETTING

The landslide occurred on the lower part of a northeast-facing slope on the edge of a bluff forming the south side of the Weber River valley (attachment 2). The lower and upper parts of the slope are separated by a bench about 400 feet wide. The lower part of the slope is about 110 feet high and the upper part is about 80 feet high. Both parts of the slope have an average gradient of about 35 percent. The Cedar Bench subdivision lies at the toe of the lower slope, a retention pond maintained by the South Weber Water Improvement District lies on the bench, and the North Davis Refuse District disposal site operated by Wasatch Energy Systems lies on the gently sloping upper surface of the bluff above the upper slope. A shallow canal, mostly lined with wood shavings in a wire mesh but unlined near the northeast corner of the retention pond, is present around the edge of the pond. The canal empties into a series of small berms and flood-control basins in a drainage east of the pond which carries the flow in the canal, if of sufficient volume, from the bench to the base of the bluff. An abandoned road traverses the middle portion of the lower slope. The road is unpaved and has a cut-slope height of about 10 feet. According to city officials, a 4-inch diameter PVC pipe is buried near the road cut to carry runoff to the northwest and discharge it below the slope. A cut slope excavated into the toe of the lower slope, with a maximum cut height of about

20 feet, is covered with a rock wall of boulders up to 3 feet in diameter. An additional cut was excavated below the wall in one back yard, adding another 10 to 15 feet to the cut-slope height.

The geology in the vicinity of the landslide is mapped in detail by Nelson and Personius (1993). They map the bench, upper slope, and upper surface of the bluff as lacustrine sands related to the transgressive phase of Lake Bonneville. These fine- to coarse-grained sands, commonly interbedded with gravelly and silty sands, were deposited in the latest Pleistocene as the lake rose to its highest level. Nelson and Personius (1993) map the lower bluff slope as landslide deposits, which are probably also underlain by Lake Bonneville sands. As the lake receded, the Weber River cut down and eroded through the lake deposits, leaving the steep bluff face adjacent to the river flood plain. As the river cut progressively deeper, the height and steepness of the bluffs exceeded their threshold of stability, causing latest Pleistocene through Holocene landslides along the edge of the bluff. The landslide deposits near the Cedar Bench subdivision are an apparent eastward extension of similar deposits first mapped by Pashley and Wiggins (1972) as the South Weber landslide complex, from 2 to 5 miles to the northwest. Nelson and Personius (1993) also map a late Holocene alluvial fan from the drainage east of the retention pond. The fan deposits underlie part of the subdivision, but natural runoff is now controlled by the flood-control structures noted earlier.

LANDSLIDE DESCRIPTION

The 1998 landslide (attachment 3) is likely a composite slide consisting of ancient, deep-seated rotational slides or slumps (possibly reactivated) overlain by active, shallow translational earth slides and flows. Possible reactivation of the deep-seated ancient landslide deposits is suggested by subtle convex bulges in the lower part of the slope, and by a slight bend in the upper metal rail of the chain-link fence at the toe of the slope. However, without knowledge of pre-existing conditions, I cannot conclusively determine if deep-seated landslide movement occurred recently. I did not observe any ground cracks on the bench above the lower slope to indicate the presence of a deeper surface of rupture.

The complex of shallow slides is about 400 feet wide, and is mostly restricted to the area above the road cut in the lower slope. The maximum scarp height is about 8 feet at the head of slides along the road cut, but deformed ground and open ground cracks up to 4 inches wide extend upslope from the road cut for about 50 feet. The complex of shallow slides is thus about 2,000 square yards in area and, if the slip surface is about 8 feet deep on average, the estimated volume of the shallow slides is about 6,000 cubic yards. A small amount of slumping occurred along the lower edge of the road cut, and saturated silty sands flowed downslope from the road cut in two locations, but I estimate their volume to be small compared to the total volume upslope of the road cut. I did not observe any springs along the slope, but some soil in the road cut was damp. The only ponded water above the slope was in the unlined portion of the drainage ditch at the northeast corner of the complex of shallow slides. Delicate striations were preserved in two locations on slide planes in silty sand, indicating very recent movement prior to my April 24 visit. I did not notice any evidence of additional significant movement on April 29, but subtle movement may have occurred that I could not detect without quantitative measurements.

PROBABLE CAUSES OF RECENT MOVEMENT

The proximity of the shallow slides to the road cut in the lower slope, and the pattern of recent precipitation and snowmelt, suggest that the slides were caused by increased pore pressure and inadequate support for material above the road cut. Precipitation in April measured by the National Weather Service in the Ogden-South Weber-Layton areas was 3.01 inches, or 117 percent of average for the month, and rainfall was reported at the site in the week prior to the slope failure. Precipitation for the calendar year (January through April, 1998) was 147 percent of average. Some additional water was introduced into the northeast corner of the slope as water ponded in the unlined portion of the canal around the retention pond, but I do not believe this contributed significantly to the movement because the most severe landsliding was closer to the northwest corner of the pond. The lack of springs and saturated soils on the lower slope suggests to me that there is no significant leakage from the retention pond on the bench above the slides. This lack of pond leakage, and the fact that the impounded water weighs less than the native soil excavated to create the pond, indicates that the retention pond was not the cause of the slides.

HAZARD POTENTIAL

Three hazards are posed to the Cedar Bench subdivision by the nearby landsliding. These hazards include continuing movement of active shallow earth slides and flows, reactivation of deep-seated landslide deposits, and a flood hazard from disruption of the flood-control structures near the east side of the retention pond.

Shallow earth slides and flows may continue to occur on the lower slope, particularly above the road cut. Shallow earth slides may also be initiated downslope by removal of material at the toe of the slope. A preliminary slope-stability analysis by UGS geologist Francis Ashland shows that the factor of safety is reduced to a cautionary level by the recent back-yard excavation below the rock wall at the base of the slope. Moreover, I believe the rock wall provides a mostly decorative function, with minimal slope reinforcement. Debris from shallow slope failures, particularly from the more fluid earth flows capable of traveling farther downslope, can be hazardous to persons near the slope at the time of slope failure and may inundate basements of nearby homes. Most nearby homes are set back from the toe of the slope by about 50 to 60 feet, but two homes on Juniper Court are set back from 15 to 30 feet. This may be too close to the slope to afford adequate safety. A small garage or storage building on one lot on Cedar Court is also at risk because of a small setback, although the building does not appear to be designed for human occupancy.

Reactivation of deep-seated landsliding, although a lower probability, may pose a greater risk than shallow slides and flows. A much larger volume of material would be involved in deep-seated landsliding, probably capable of moving farther from the toe of the slope. If the main scarp of the landslide regressed far enough southward, the potential exists for failure of the retention-pond lining, resultant flooding, and saturation of landslide debris. This would contribute to additional landsliding and possibly create a fluid mass of debris capable of traveling a considerable distance downslope into the subdivision.

Flooding from disruption of the flood-control structures in the drainage on the east side of the retention pond may result from landsliding or, during periods of intense rainfall, failure of the berms that border the flood-control basins. On my site visits, I observed piping in the berms which may contribute to their failure. The presence of alluvial-fan deposits at the mouth of the drainage indicates that significant floods and debris flows have occurred there in the past. Homes near the outlet of this drainage may be at risk even with the flood-control structures in place as currently designed.

The landslide potential at the site was considered by UGS geologist Mike Lowe (1994) in his review of a geotechnical report for the Cedar Bench subdivision (Huntingdon Chen-Northern, Inc., 1993). The geotechnical report states that the factor of safety for the slope under static (noncarthquake) conditions, calculated using a quantitative slope-stability analysis, was 1.34 prior to subdivision construction. Lowe (1994) reports that it is standard practice to take precautions with development when the calculated factor of safety is less than 1.5 under static conditions. Also, he notes that the factor of safety in the geotechnical report assumed a depth to ground water of 100 feet, but that Gill (1985) determined a depth to ground water of between 13 and 20 feet about 1.3 miles southwest of the Cedar Bench subdivision. Lowe (1994) states that if the depth to ground water at the top of the lower slope is less than 100 feet, the calculated factor of safety would be lower than reported in Huntingdon Chen-Northern, Inc. (1993). Thus, the slope is potentially unstable under static conditions, and snowmelt and heavy precipitation increase instability. Under pseudo-static (earthquake) conditions, the slope is also potentially unstable. Huntingdon Chen-Northern, Inc. (1993) reported a pseudo-static factor of safety of 1.02 which, if ground water is shallower than assumed in the geotechnical report, would be even lower. Lowe (1994) reports that it is standard practice to take precautions with development when the calculated factor of safety is less than 1.1 under pseudo-static conditions. As a result, Lowe (1994) recommended that measures should have been taken prior to development to increase the stability of the slope to acceptable levels and/or delineate setbacks from the base of the slope to protect the development from potential slope

RECOMMENDATIONS

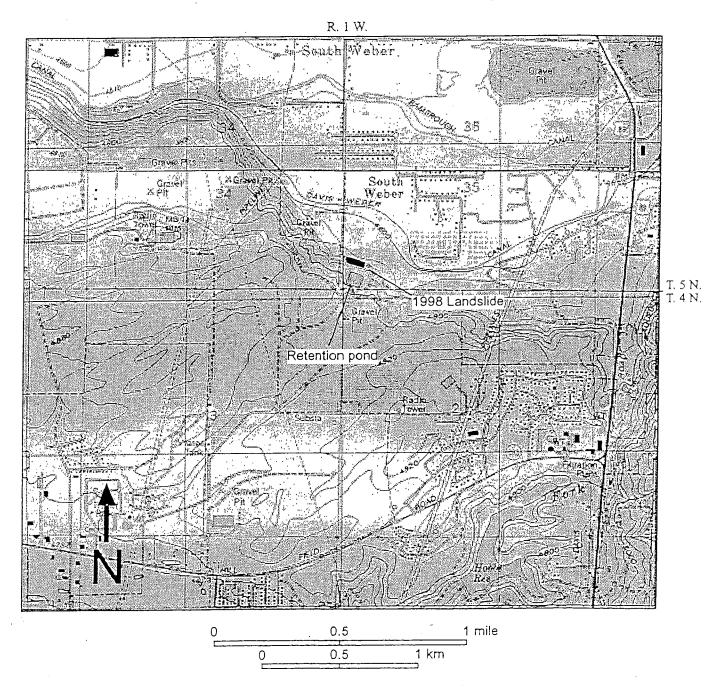
The possibility of continued landsliding warrants remedial measures. The first remedial measure to stabilize the slope should be the immediate cessation of excavation into the toe of the slope. This should be followed by a detailed geotechnical-engineering slope-stability investigation, as outlined in Hylland (1996), to design an engineered solution which may include graded slopes, retaining walls, and drain systems. Proposed remediation should address the effect on slope stability of the abandoned road cut in the lower slope and infiltration of ponded water on the road into downslope material. The buried PVC pipe along the road cut may need to be relocated to remove any potential for introduction of water into the slope from leaks in the pipe, perhaps caused by the existing slope failure. Engineered remedial measures should also consider means to minimize water infiltration at the head of the slope, including the prevention of ponding in the drainage canal near the retention pond, and at the toe of the slope through diversion of drainage from flood-control structures on the slope into the municipal storm-drainage system rather than into the toe. Also, the flood-control structures should be inspected and, if necessary, repaired to prevent their failure from

piping or other potential causes. Periodic inspection of the retention pond for leaks, and repairs as necessary, is also prudent.

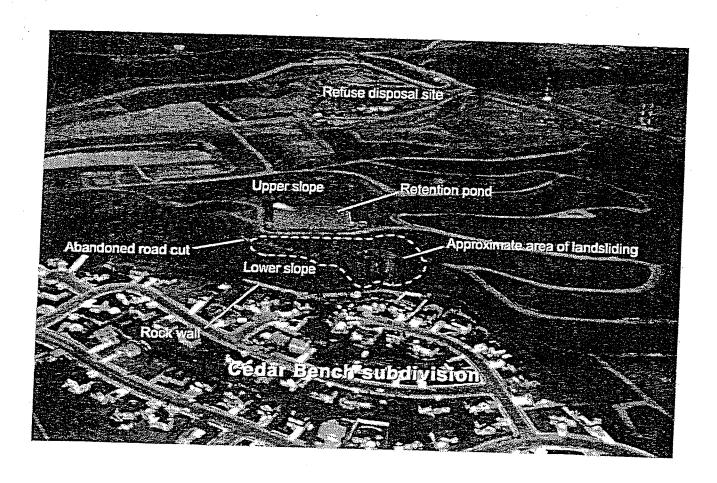
Landslide activity should be monitored on a regular basis to provide an early indication of the hazard potential. This monitoring could include repeated surveying of permanent monuments on the landslide or measuring of separation distances between stakes spanning cracks and scarps. Monitoring should be conducted at least weekly throughout the spring and early summer to determine whether the slide continues to move. Even if no evidence of movement is found during this period, I also recommend that monitoring be conducted later in the year after intense rainstorms. If no movement is indicated over the next year the slide can be considered dormant, although the conditions for renewed movement will remain until remedial action is taken (Cruden and Varnes, 1996) and monitoring will be prudent each spring. The classification of the landslide as dormant does not preclude the potential for future movement.

REFERENCES

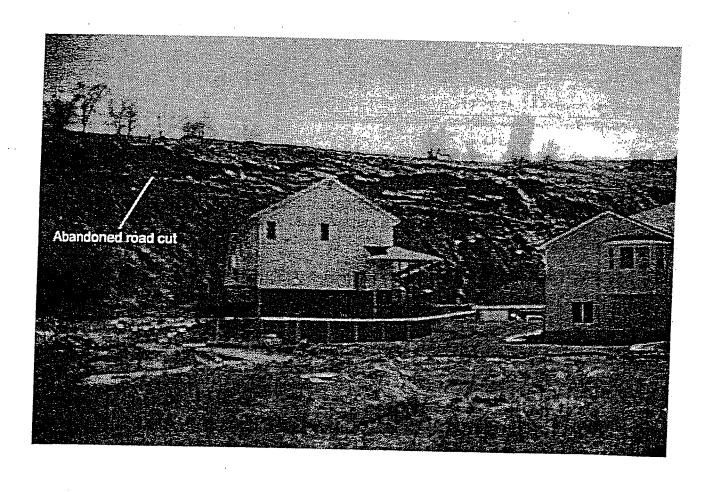
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Attachment 1. Location map.



Attachment 2. Oblique aerial view looking south at the 1998 landslide near the Cedar Bench subdivision. Shallow earth slides are present on the lower slope below the retention pond and above the abandoned road cut. Earth slides and flows are present below the road cut to the toe of the slope.



Attachment 3. South view of lower slope behind the Cedar Bench subdivision. Shallow earth slides are above and below the abandoned road cut.



State of Utah

Department of Natural Resources

MICHAEL R. STYLER Executive Director

Utah Geological Survey

RICHARD G. ALLIS, PH.D.

State Geologist/
Division Director

JON M. HUNTSMAN, JR. Governor

GARY R. HERBERT Lieutenant Governor

April 5, 2005

Boyd Davis City Engineer South Weber City 1600 E. South Weber Drive South Weber, Utah 84405

Reference: UGS Technical Report No. 98-14—Reconnaissance of landslides near the Cedar Bench subdivision, South Weber

Dear Boyd:

Upon notification by Brett Michelson of IGES that movement had been detected, Gary Christenson and I inspected landslides on the slope adjacent to the south edge of the Cedar Bench subdivision on Thursday, March 31, 2005, with you and representatives of IGES, Wasatch Integrated Waste Management District (WIWMD), and South Weber Water Improvement District (SWWID). We believe that the landslides are relatively shallow and additional movement may occur with little or no warning. Homes closest to the slope are subject to the highest hazard. We saw no evidence that deeper-seated landslide movement was occurring or is imminent, although such landsliding is possible and could pose a threat to additional homes more distant from the slope. We recommend alerting homeowners close to the base of the slope to be aware of signs of slope failure. Periods of greatest risk are during and after heavy rainfall or snowmelt events. We also recommend continued slope monitoring as now conducted by IGES, the geotechnical consultant to WIWMD, the owners of the slope and nearby sanitary landfill. This will alert you to continued movement and indicate where landslides are most likely, but will not necessarily provide sufficient warning should a rapid slope failure occur. As indicated in our report of May 21, 1998 (Utah Geological Survey Technical Report 98-14), the city of South Weber and WIWMD should evaluate the stability of this slope and determine how best to reduce the landslide hazard.

On our visit to the site, we inspected the slope that has failed, the base of the slope near the fence bounding the back yards of downslope homesites, and the area between the slope and the upslope site of the retention pond operated by SWWID. The slope is the site of at least one earlier episode of landsliding in 1998, and the renewed shallow landsliding is similar to the earlier episode. Ongoing slope monitoring by IGES indicates that parts of the mid-slope continue to move, but no movement has occurred at the top of the slope. Most landsliding is limited to the area above and directly below the abandoned road cut at mid-slope, and some slides have crossed the road and flowed downslope. These landslides have not run out beyond the downslope fence, but the fence at

Utah	Ge	eological	Survey
April	5,	2005	

Page 2 of 2 Cedar Bench subdivision

one location is partially buried and distorted. This may be a result of the landsliding, or may be due to long-term soil creep, a process of gradual and steady downhill movement of soil, and burial by slope wash. We observed ground cracks on parts of the slope indicating instability and suggesting a potential for enlarging the area of active movement. The cracks did not extend upslope to the road and adjacent berm surrounding the pond, indicating this area has not been affected by the current episode of landsliding. Should large-scale, deeper-seated landsliding occur, however, the pond may be threatened and, if breached when filled, its water may contribute to slope failure and flooding.

Although the 1998 and 2005 landslides have not run out beyond the fence at the base of the slope, we cannot preclude the possibility of a rapid landslide with larger runout similar to the landslide at 425 East South Weber Drive on February 20, 2005, that crossed South Weber Drive and ran out 150 feet from the base of the slope. The homes at 8069 and 8072 Cedar Court, and 8085 and 8092 Juniper Court, are closest to the slope and are therefore subject to the greatest risk from additional shallow landsliding. Homes at 8063 Cedar Court and 8090 Juniper Court lie farther from the slope but may also be affected by future landsliding. Other homes in the subdivision do not appear to face a significant hazard from the recent shallow landsliding. An important factor affecting the mode of shallow landsliding is the nature of soil in the slope. After comparing aerial photographs taken in 1960, prior to construction of the pond, with ones taken in 2003 after pond construction, we believe the face of the natural slope at the site was considerably modified and is likely underlain by a layer of fill rather than native soil.

We therefore concur with the city's decision to notify residents, particularly those closest to the slope, of the landslide hazard. Monitoring of the slope for additional movement should continue. A detailed analysis of slope stability should be performed to help determine the best course of action to protect the homes and pond.

If you have any questions, please contact me at 801-537-3388 or barrysolomon@utah.gov.

Sincerely,

Barry J. Solomon, P.G.

Senior Geologist

Geologic Hazards Program

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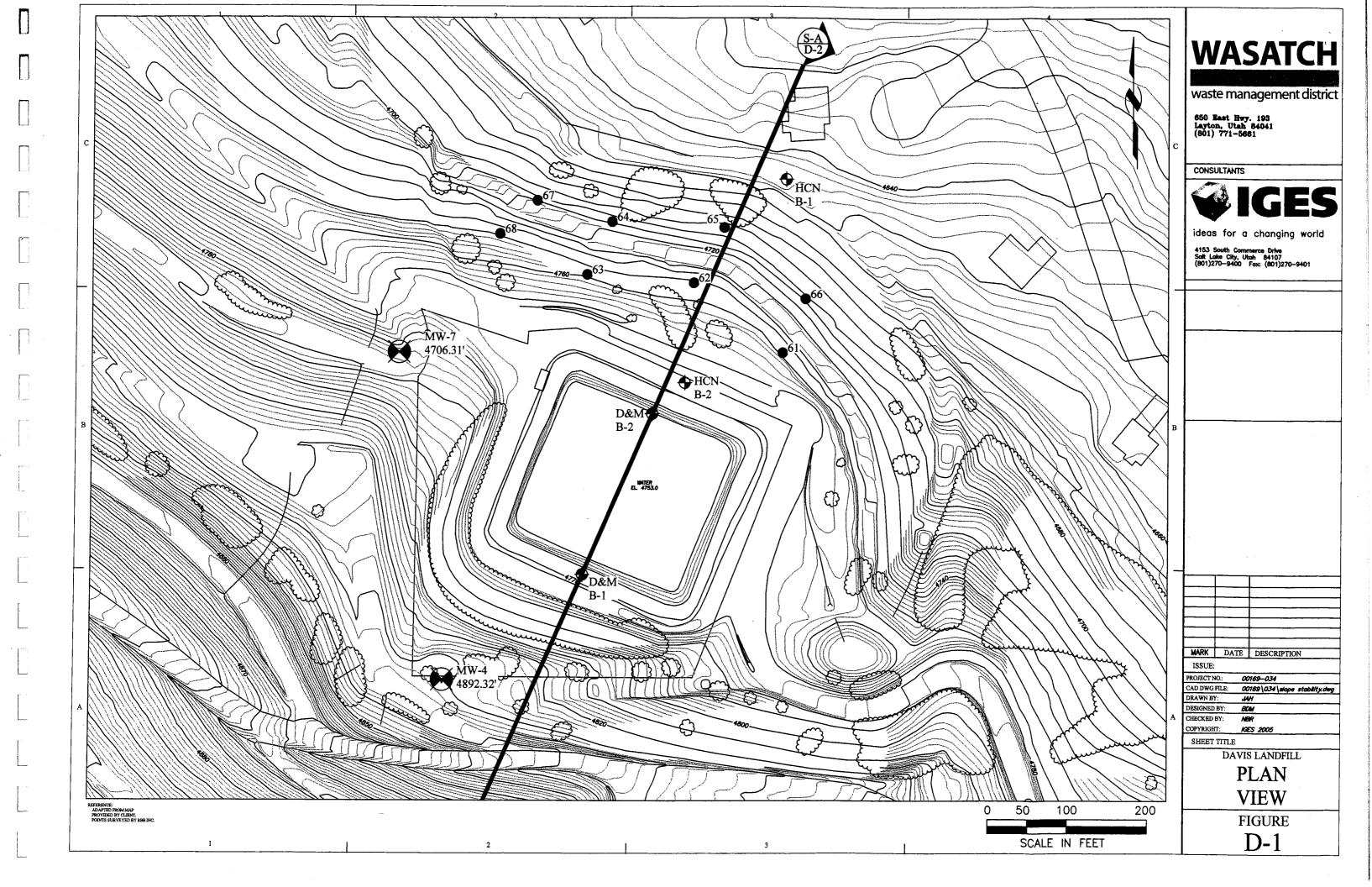
cc: Brett Mickelson, IGES
Brian Law, Davis County
Bret Dixon, Utah Office of Dam Safety

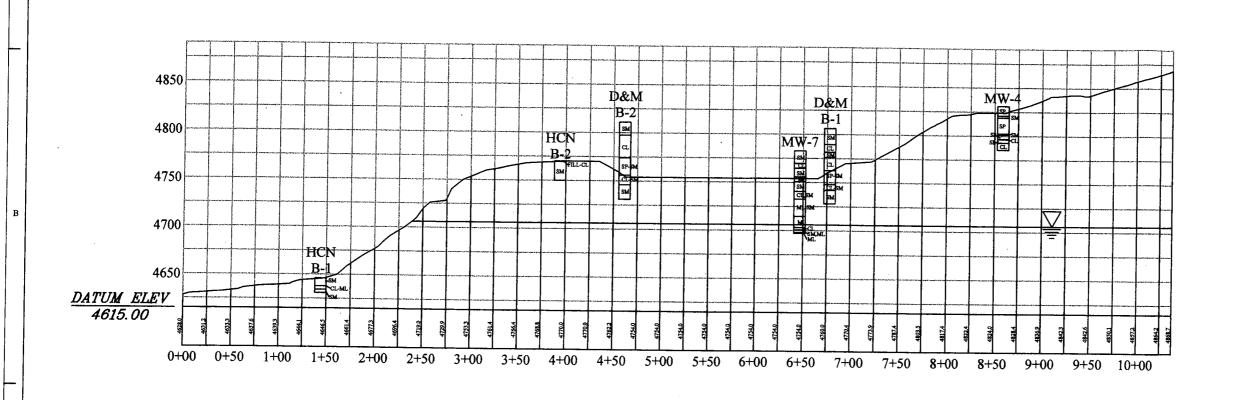
SLOPE MONITORING POINTS

	_ :						NORTHING DIFFERENCE	EASTING DIFFERENCE	ELEVATION DIFFERENCE			•
	DATE	POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION	FROM LAST	FROM LAST	FROM LAST	FROM FIRST	FROM FIRST	FROM FIRST
<u> </u>	3/1/2005	61	203679.407	102904.590	4762.223	HUB & TACK	•	•				
	3/15/2005	61	203679.400	102904.582	4762.242	HUB & TACK	-0.007	-0.008	0.019	· :		
	3/22/2005	61	203679.424	102904.582	4762.211	HUB & TACK	0.024	0.000	-0.031	0.017	-0.008	-0.012
	3/30/2005	61	203679.399	102904.565	4762.200	HUB & TACK	-0.025	-0.017	-0.011	-0.008	-0.025	-0.023
-	4/5/2005	61	203679.426	102904.600	4762.212	HUB & TACK	. 0.027	0.035	0.012	0.019	0.010	-0.011
	4/12/2005	61	203679.412	102904.601	4762.213	HUB & TACK	-0.014	0.001	0.001	; 0.005	0.010	-0.010
	3/1/2005	62	203768.434	102793.398	4753.212	HUB & TACK						
-	3/15/2005	62	203768.450	102793.382	4753.218	HUB & TACK	0.016	-0.014	0.006	:	•	*
_	3/22/2005	62	203768.505	102793.382	4753.219	HUB & TACK	0.055	0.000	0.001	0.071	-0.016	0.007
	3/30/2005	62	203768.453	102793.364	4753.200	HUB & TACK	-0.052	-0.018	-0.019	-0.019	-0.034	-0.012
ww.	4/5/2005	62	203768.498	102793.362	4753.225	HUB & TACK	0.045	-0.002	0.025	0.064	-0.036	0.013
	4/12/2005	62	203768.465	102793.373	4753.223	HUB & TACK	-0.033	0.011	-0.002	0.031	-0.025	0.011
	3/1/2005	63	203775.765	102659.322	4760.097	HUB & TACK			·			
	3/15/2005	63	203775.749	102659.297	4760.042	HUB & TACK	-0.016	-0.025	-0.055			
	3/22/2005	63	203775.771	102659.314	4760.050	HUB & TACK	0.022	-0.008	0.008	0.006	-0.008	-0.047
	3/30/2005	63	203775.765	102659.328	4760.052	HUB & TACK	-0.006	0.014	0.002	0.000	0.006	-0:.045
	4/5/2005	63	203775.802	102659.321	4760.022	HUB & TACK	0.037	-0.007	-0.030	0.037	-0.001	-0.075
	4/12/2005	63	203775.784	102659.299	4760.086	HUB & TACK	-0.018	-0.022	0.064	0.019	-0.023	-0.011
	47 1272000	00	200110,101	102000.200	4700.000	1700 a 171010	0.010	0.022	0.00			
	3/1/2005	64	203840.551	102690.601	4713.675	HUB & TACK	·			•		
	3/15/2005	64	203840.989	102690.579	4714.342	HUB & TACK	0.435	-0.022	0.667			
. * . *	3/22/2005	64	203841.006	102690.584	4714.368	HUB & TACK	0.017	0.005	0.026	0.455	-0.017	0.693
_	3/30/2005	64	203840.995	102690.566	4714.337	HUB & TACK	-0.011	-0018	-0.031	0.444	-0.035	0.662
	4/5/2005	64	203841.041	102690.581	4714.383	HUB & TACK	0.046	0.015	0.046	0.490	-0.020	0.708
	4/12/2005	64	203841.028	102690.582	4714.378	HUB & TACK	-0.013	0.001	-0.005	0.477	-0.019	0.703
				•		-				•		•

SLOPE MONITORING POINTS

	DATE	POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION	NORTHING DIFFERENCE FROM LAST	EASTING DIFFERENCE FROM LAST	ELEVATION DIFFERENCE FROM LAST	1	EASTING DIFFERENCE FROM FIRST	
•												
	3/1/2005	65	203833.251	102831.479	4701.997	HUB & TACK						
	3/15/2005	65	203833.171	102831.483	4701.920	HUB & TACK	-0.080	0.004	-0.077			•
	3/22/2005	65	203833.201	102831.476	4701.950	HUB & TACK	0.030	-0.007	0.030	-0.050	-0.003	-0.047
	3/30/2005	65	203833.190	102831.466	4701.959	HUB & TACK	-0.011	-0.010	0.009	-0.061	-0.013	-0.038
	4/5/2005	65	203833.212	102831.450	4701.934	HUB & TACK	0.022	-0.016	-0.025	-0.039	-0.029	-0.063
	4/12/2005	65	203833.231	102831.484	4701.940	HUB & TACK	0.019	0.034	0.006	-0.020	0.005	-0.057
	3/1/2005	66	203745.765	102933.050	4714.465	HUB & TACK						
	3/15/2005	66	203745.705	102933.036	4714.400	HUB & TACK	-0.058	-0.014	-0.065	-		
	3/22/2005	66	203745.713	102933.042	4714.448	HUB & TACK	0.008	0.006	0.048	-0.052	-0.008	-0.017
	3/30/2005	66	203746.294	102933.776	4713.887	HUB & TACK	0.581	0:734	-0,561	0.529	0.726	-0.578
	4/5/2005	66	203746.934	102934.441	4713.408	HUB & TACK	0.640	0.665	-0.479	1.169	1.391	-1.057
	4/12/2005	66	203747.216	102934.723	4713.198	HUB & TACK	0.282	0.282	0.210	1.451	1.673	-1.267
	3/1/2005	67	203866.601	102596.822	4713.678	HUB & TACK						
	3/15/2005	67	203866.576	102596.846	4713.657	HUB & TACK	-0.025	0.024	-0.021			•
	3/22/2005	67	203866.574	102596.848	4713.688	HUB & TACK	-0.002	0.002	0.031	-0.027	0.026	0.010
	3/30/2005	67	203866.589	102596.850	4713.662	HUB & TACK	0.015	0.002	-0.026	-0.012	0.028	-0.016
′ .	4/5/2005	67	203866.589	102596.834	4713.672	HUB & TACK	0.000	-0.016	0.010	-0.012	0.012	-0.006
	4/12/2005	67	203866.597	102596.838	4713.668	HUB & TACK	0.008	0.004	-0.004	-0.004	0.016	-0.010
	3/1/2005	68	203825.822	102550.124	4751.823	HUB & TACK					•	
	3/15/2005	68	203825.838	102550.119	4751.786	HUB & TACK	0.016	0.005	0.027		•	
	3/22/2005	68	203825.843	102550.113	4751.795	HUB & TACK	0.016	-0.005	-0.037	0.001	0.000	0.000
	3/30/2005	68	203825.829	102550.138	4751.793	HUB & TACK		0.014	0.009	0.021	0.009	-0.028
	4/5/2005	68	203825.842	102550.132	4751.773	HUB & TACK	-0.014 0.013	0.005	-0.022	0.007	0.014	-0.050
	4/12/2005	68	203825.885	102550.150	4751.765	1		0.006	0.010	0.020	0.008	-0:040
	711212000	00.	20020,000	102000.100	7/01.020	HUB & TACK	0.043	0.018	0.042	0.063	0.026	0.002





WASATCH

waste management district

650 East Hwy. 193 Layton, Utah 84041 (801) 771-5661

CONSULTANTS



ideas for a changing world

4153 South Commerce Drive Salt Lake City, Utoh 84107 (801)270—9400 Fax: (801)270—9401

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DESIGNED BY:

DAVIS LANDFILL

ELEVATION VIEW

> **FIGURE** D-2

SCALE IN FEET

100

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REFERENCE:
ADAPTED FROM MAP
PROVIDED BY CLIENT.
POINTS SURVEYED BY RBB INC.

SLOPE SECTION A

Wasatch Integrated Section A Below Reservoir (STATIC - No GWT) M:\PROJECTS\00169-~D\034_\WI_GST~8\WI_SA_1.PL2 Run By: rtc 4/1/2005 9:01AM 5000 FS Soil Total 1.026 Desc. Type Unit Wt. Unit Wt. Intercept Angle Surface (psf) No. (pcf) (pcf) (deg) No. 1.035 130.0 50.0 32.0 sm/ml 1 120.0 $\mathbf{W}1$ 1.044 CONSULTANTS 1.059 1.064 1.066 1.068 4900 1.083 1.084 1.088 4800 4700 4600 MARK DATE DESCRIPTION ISSUE: PROJECT NO.: CAD DWG FILE: DRAWN BY: DESIGNED BY: 4500 100 200 300 400 600 500 700 GSTABL7 v.2 FSmin=1.026 Safety Factors Are Calculated By The Modified Bishop Method

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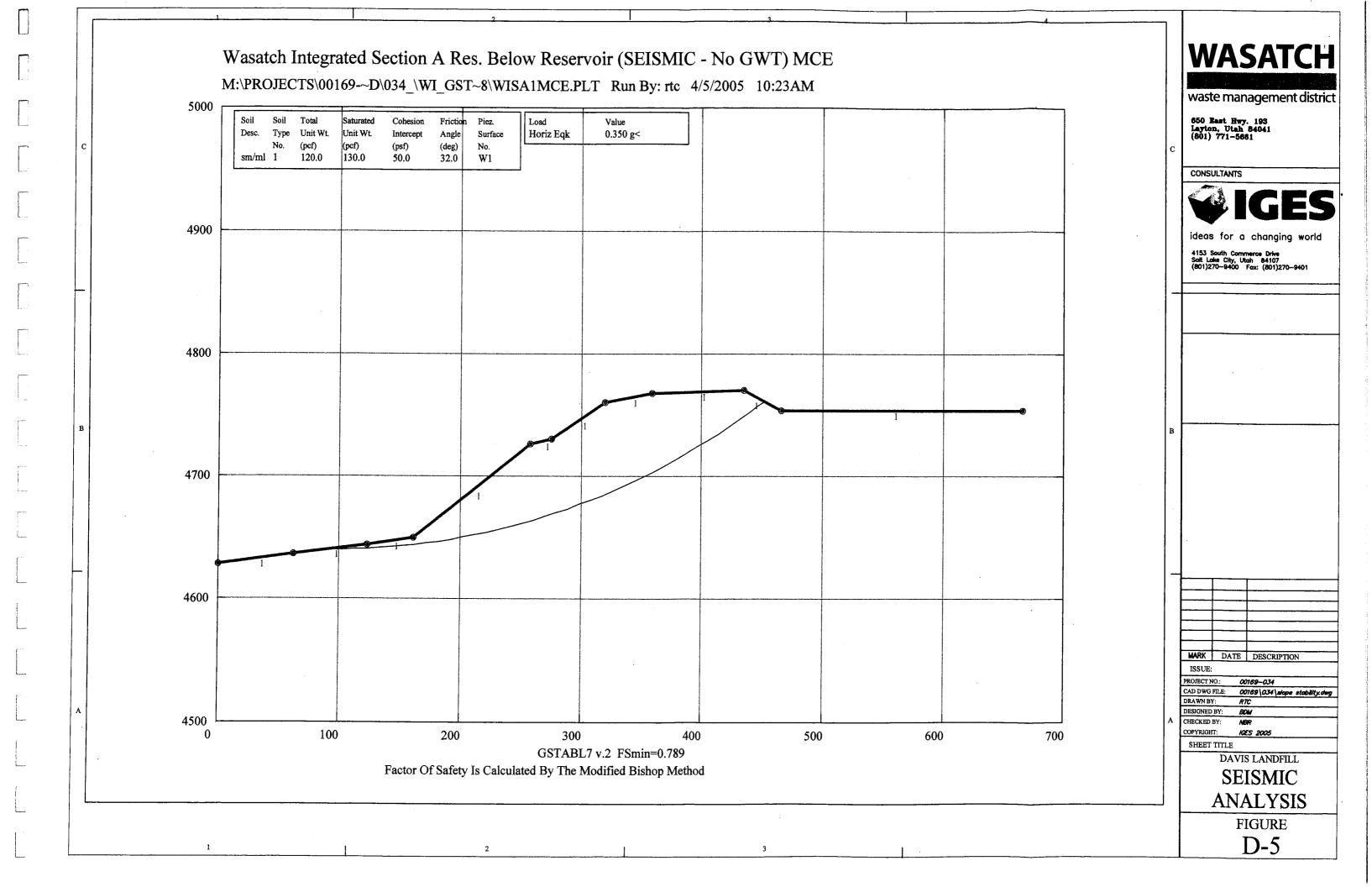
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DAVIS LANDFILL

STATIC ANALYSIS

> **FIGURE** D-3

WASATCH Wasatch Integrated Section A Below Reservoir (STATIC - With GWT) $M:\ \ M:\ \ M:\$ waste management district 5000 FS Soil 650 East Hwy. 193 Layton, Utah 84041 (801) 771-5861 Cohesion 0.507 Desc. Type Unit Wt. Unit Wt. Angle Surface No. 0.512 (pcf) (psf) (deg) No. sm/ml 1 120.0 130.0 50.0 32.0 W10.514 CONSULTANTS 0.526 0.528 0.530 0.540 4900 ideas for a changing world 0.541 0.543 4153 South Commerce Drive Soft Lake City, Utah 84107 (801)270-9400 Fax: (801)270-9401 0.544 4800 4700 4600 MARK DATE DESCRIPTION ISSUE: PROJECT NO.: CAD DWG FILE: 00169\034\slope stability.dwg DRAWN BY: DESIGNED BY: 4500 CHECKED BY: 100 IGES 2005 200 300 500 600 700 SHEET TITLE GSTABL7 v.2 FSmin=0,507 DAVIS LANDFILL Safety Factors Are Calculated By The Modified Bishop Method **STATIC ANALYSIS FIGURE** D-4



Wasatch Integrated Section A Res. Below Reservoir (SEISMIC - With GWT) MCE 5000 Friction Piez. Load Value Type Unit Wt. Unit Wt. Intercept Horiz Eqk 0.350 g< Angle Surface No. (pcf) (psf) (deg) 120.0 130.0 32.0 sm/ml 1 50.0 W1 4900 4800 4700 4600 4500 100 200 300 400 500 600 700 GSTABL7 v.2 FSmin=0.589 Factor Of Safety Is Calculated By The Modified Bishop Method

WASATCH

waste management district

650 East Hwy. 193 Layton, Utah 84041 (801) 771-5861

CONSULTANTS



4153 South Commerce Drive Salt Lake City, Utoh 84107 (801)270-9400 Fax: (801)270-9401

MARK DATE DESCRIPTION

PROJECT NO.: CAD DWG FILE: 00169 \034 \siape stability.dwg DRAWN BY: DESIGNED BY:

COPYRIGHT: IGES 2005

DAVIS LANDFILL

SEISMIC ANALYSIS

> **FIGURE** D-6

WASATCH Wasatch Integrated Section A Res. Below Reservoir (SEISMIC - No GWT) OBE M:\PROJECTS\00169-~D\034_\WI_GST~8\WISA1OBE.PLT Run By: rtc 4/5/2005 10:27AM waste management district 5000 Total Friction Piez. Load Value 650 East Hwy. 193 Layton, Utah 84041 (801) 771-5861 Type Unit Wt. Intercept Angle Surface Horiz Eqk 0.110 g< No. (pcf) (pcf) (psf) (deg) No. sm/ml 1 120.0 130.0 50.0 32.0 W1 CONSULTANTS 4900 4153 South Commerce Drive Salt Lake City, Utoh 84107 (801)270-9400 Fax: (801)270-9401 4800 4700 4600 MARK DATE DESCRIPTION PROJECT NO.: 00169-034 CAD DWG FILE: 00169\034\slope stability.dwg DRAWN BY: ESIGNED BY: 4500 CHECKED BY: 100 IGES 2005 200 300 COPYRIGHT: 400 500 600 700 SHEET TITLE GSTABL7 v.2 FSmin=1.261 DAVIS LANDFILL Factor Of Safety Is Calculated By The Modified Bishop Method **SEISMIC ANALYSIS FIGURE** D-7

Wasatch Integrated Section A Res. Below Reservoir (SEISMIC - With GWT) OBE $M:\ \ M:\ \ M:\$ 5000 waste management district Value Type Unit Wt. 650 East Hwy. 193 Layton, Utah 84041 (801) 771-5661 Angle Surface Horiz Eqk 0.110 g< No. (pcf) (psf) (deg) No. 120.0 130.0 50.0 32.0 W1 CONSULTANTS 4900 4153 South Commerce Drive Solt Lake City, Utah 84107 (801)270–9400 Fax: (801)270–9401 4800 4700 W1 4600 MARK DATE DESCRIPTION ISSUE: PROJECT NO.: 00169-034 CAD DWG FILE: 00169\034\slope stability.dwg DRAWN BY: 4500 DESIGNED BY: 100 200 CHECKED BY: 300 400 500 600 700 GSTABL7 v.2 FSmin=0.973 Factor Of Safety Is Calculated By The Modified Bishop Method DAVIS LANDFILL **SEISMIC ANALYSIS FIGURE**

WASATCH

D-8

know that as of late you have been getting an incredible amount of feedback from citizens. I can understand that it can be exhausting. It is exhausting for us as well.

Dear City Council Members and Mayor-

The Lofts is a great example of this. It would appear that until the residents informed you, the city council did not Know dents. And to be honest, there seems to be a great disconnect between some of you, our elected officials and staff. I hope that you can understand that we feel there is a great disconnect between our elected officials and the resiabout all the problems that was behind the Lofts. Did you realize what staff had recommended to you?

and if it did, it was in the far, far future. But according to records received from a GRAMA request, it would appear A few weeks back, a number of the council members said that they didn't anticipate that SBD would ever occur, this is far from just a line on a map for right now.

in an email to a couple directors at WFRC, Brandon Jones said the following about South Bench Drive.

connection, we are requesting that these roads be functionally classified as a Major Collector. This matches the current classification of Church Street south of SR-193. Although the street cross sections vary slightly between As both South Weber City and Layton City are taking steps to plan for and construct this very important road South Weber City and Layton City, they both provide for the road to function as a Major Collector.

South Weber City is providing the information and submitting the request, but has met with Layton City to get their endorsement and concurrence as evidenced by their signature on the Cover Letter."

alignment would be losing the regional nature/purpose of the road. If only portions are functionally classified at this email: "Just for the record, my biggest concern about potentially only functionally classifying a portion of the whole It would appear that fearing that only a portion of the road would be classified, Brandon later added in the same point, the road may look more like a local road, when it's whole purpose and intent is to provide regional connectivity. Just keep that in mind as you discuss this with WFRC and FHWA."

We see here and in other places Layton City gave it's endorsement. UDOT has been talked to and it would appear even the Federal Government has been asked for funds. And yet, the public knew very little if anything at all. City council, I ask you to answer this question—Did you know that these funds for this PROPOSED road were being sought before involving the public?

Document, dated 9/18/2018 for South Bench Drive Project shows that when asked if any public information or community meetings have been held, it was checked YES! When and where were these meetings held?

road was years and years off, if it ever happened at all. I hope you can imagine our shock and dismay to learn in the frankly very little discussion seems to have happened with the City Council. And yet staff, at the direction of Mayor Jo, was moving forward at an accelerated pace. As citizens, we felt good when we heard from our council that this this PROPOSED road. We had to dig for that information, which makes it all the more unsettling. Additional emails following days that grants from the WFRC, the state and federal government, were actively being sought to fund South Bench Drive is a PROPOSED road. Public comment prior to these discussions had not even happened. And show further insight that some in the city feel about the progress of this road. In another email thread to the directors of the WFRC, Brandon Jones is quoted saying: "The first phase at the north end by I-84 is budgeted to be built next summer 2019. I anticipate the remaining portion to South Weber Drive (SR-3-8 years. From 1075 East up the hillside and connecting to Church Street and/or Fairfield Road, my estimate would happen unless they are pretty certain that it will move forward. So which is it; this road will never happen, this road 60) would be built within the next 2-5 years. From South Weber Drive (SR-60) to 1075 East, my estimate would be be 5-15 years." What happened to the 50 years in the future our council told us about this road? What about the Brandon stated in the 2019 Retreat in which you all attended. He also added that classification doesn't typically comments that it would "never" happen? The fact is, this road, no doubt from Brandon's urging, was classified. is in the significant future or is this road happening within the next 10-15 years with work on the slope and the hillside being actively pursued for funds.

priority over other roads is that: "This project creates a new road for South Weber City. South Bench Drive will help City roads. South Bench Drive will eventually connect into the boundary of Layton City, providing additional connecto decrease traffic from the existing State Road– SR-60. This takes traffic loads off of a State Road and places it on In a report form for this project evaluation with WFRC, Brandon stated that the reason SBD should be given a tivity between communities."

South Weber, including our elected officials have expressed great concerns about the stability and contamination of one who lives in South Weber knows that it is happening on a blind corner. There was a great deal of discussion last week at the PC meeting about the Knoll's and it's location where it meets SWD because it IS a matter of concern for our slopes. The same response was given in the report that was for the intersection of SWD and SBD, and yet any-When asked if there were any safety hazards or risks with this project, Brandon selected "none". And yet many in

feel there is transparency. Why we do not feel there is communication and why we do not feel this city has the best This is just a glimpse into information we have found through hard work. I hope you can understand why we do not interest of the residents at heart. How can we, when we were completely side stepped on these major decisions? I am including the distinctions between a Major Collector and Minor Collector. Please read the underlined portion and see how that fits in our city.

Mayor, on a "Road that may never happen"? I ask you to take a step back and let's not start over, but fill in the I would like to know exactly how much money was paid to Brandon Jones for all this work, per request of the blanks that were missed. As citizens, we should have been given the very first priority in this entire process. Notes: Signatures confirm the commitment of the Applicant to follow the Guldelines established by Davis County. The Applicant is responsible for the maintainance and upkeep of the project during implementation and after project completion.

Your signature below indicates your agency's willingness to enter into formal agreement to complete and maintain the project if selected for funding.

Signature:



Date: 9-14-2018

APPLICATION INFORMATION

Project Sponsor:

South Weber City

Contact Person:

Brandon Jones

Title:

City Engineer

Address:

1600 E. South Weber Drive

ZIP;

84405

Phone:

801-476-9767

Mobile:

801-391-9621

Email:

brandonj@jonescivil.com

PROJECT INFORMATION

Project Title:

South Bench Drive Project

Project Location:

475 East (I-84 Interchange) to approx. 770 East

Facility Length:

0.55

Brief Project

Description:

This Project consists of constructing a new major collector road that will convey traffic directly to the I-84 Interchange at Adams Ave. and 475 East. It also includes the reconfiguration of the 475 East / 6650 South intersection and connecting 3 new or future intersections.



Have any public information or community meetings been held?

Yes

Yes / No

Describe public and private support for the project.

(Examples: petitions, written endorsements, resolutions, etc.):

This Project involves the support of many public and private entities (e.g. property owners, developers, and utility companies). The City has obtained Development Agreements with two separate developers who are participating financially and by donating property. The City has also held many public hearings and hosted open houses for public input.

3.1.5 Major and Minor Collectors

Collectors serve a critical role in the roadway network by gathering traffic from Local Roads and funneling them to the Arterial network. Within the context of functional classification, Collectors are broken down into two categories: Major Collectors and Minor Collectors. Until recently, this division was considered only in the rural environment. Currently, all Collectors, regardless of whether they are within a rural area or an urban area, may be sub-stratified into *major* and *minor* categories. The determination of whether a given Collector is a Major or a Minor Collector is frequently one of the biggest challenges in functionally classifying a roadway network.

In the rural environment, Collectors generally serve primarily intra-county travel (rather than statewide) and constitute those routes on which (independent of traffic volume) predominant travel distances are shorter than on Arterial routes. Consequently, more moderate speeds may be posted.

The distinctions between Major Collectors and Minor Collectors are often subtle. Generally, Major Collector routes are longer in length; have lower connecting driveway densities; have higher speed limits; are spaced at greater intervals; have higher annual average traffic volumes; and may have more travel lanes than their Minor Collector counterparts. Careful consideration should be given to these factors when assigning a Major or Minor Collector designation. In rural areas, AADT and spacing may be the most significant designation factors. Since Major Collectors offer more mobility and Minor Collectors offer more access, it is beneficial to reexamine these two fundamental concepts of functional classification. Overall, the total mileage of Major Collectors is typically lower than the total mileage of Minor Collectors, while the total Collector mileage is typically one-third of the Local roadway network (see **Table 3-3**).

Table 3-3: Characteristics of Major and Minor Collectors (Urban and Rural)

	MAJOR COLLECTORS	
	Urban	Rural
	Serve both land access and traffic circulation in <i>higher</i> density residential, and commercial/industrial areas	Provide service to any county seat not on an Arterial route, to the larger towns not directly served by the higher systems and to other
	Penetrate residential neighborhoods, often for significant distances	traffic generators of equivalent intra-county importance such as consolidated schools,
	Distribute and channel trips between Local Roads and Arterials, usually over a distance	shipping points, county parks and important mining and agricultural areas
e en manyahi jarin disebbandia ten	of <i>greater than</i> three- quarters of a mile	Link these places with nearby larger towns and
Contract to the second Contract	Operating characteristics include	cities or with Arterial routes
distributional negliore (orașe ne de septiment plantos) processos de capacites.	higher speeds and more signalized intersections	Serve the most important intra-county travel corridors

RVs, and are commonly used. He said they market Park Model cabins as nightly hotels and extended stays. He said the current city ordinance defines short term occupancy (15 days) but nothing for extended stays. He would like to see if "extended occupancy stay" can be added to the city ordinance. He said in some of their other properties they do have individuals bring in their tiny homes.

He is excited about putting a high tax revenue use on a property that would otherwise not be developed. He is hoping to get some feedback or any concerns.

Mayor Sjoblom asked what the property would look like as far as improvements go. Mr. Winkel said there will be asphalt with some grass and comfort stations. Council Member Taylor asked about the flood plain. Mr. Winkel isn't sure they can take it out of the flood plain, but would try to mitigate as much as they can. He would hope to connect to city sewer and water. He estimated 115 sites. He said they do allow animals in units that they don't control. He explained signage would help business, but he hasn't looked into the city ordinance.

Council Member Petty asked about the entrance. Mr. Winkel identified the easement with UDOT. He said access would be through Cottonwood Drive.

Council Member Halverson asked about the percentage of mixed use. Mr. Winkel said it is difficult to estimate the demand for overnighters.

Council Member Petty feels it is a great use for the property, but is concerned about the utilities hookups and extended stays (because the city ordinance will need to address this). Mayor Sjoblom feels it is a good use for the property. Council Member Halverson feels the only problems may be from neighbors. Mr. Winkel discussed the entrance having a parking lot that would access the trail. Council Member Halverson feels it is a good use for the property. Mayor Sjoblom asked if there is someone there twenty-four hours from management. Mr. Winkel said he didn't think there will be someone on site twenty-four hours. Council Member Winsor is concerned about possible crime, if no one is on site after hours.

Ruben Minna, stated there are systems in place. He said they do background checks on extended stay occupants. Mr. Winkel asked about the time frame for extended stay. Council Member Halverson feels there needs to be a definition of the extended stay. Mr. Winkel suggested 120 days and then they have to leave the park.

The Mayor and Council thanked Mr. Winkel for his presentation.

REPORTS:

Mayor Sjoblom: Mayor Sjoblom stated she attended the Wasatch Choice Workshop with Brandon Jones and Barry Burton. They presented maps of the new position of South Bench Dr. She said if it is approved by the City Council and the General Plan is amended to include it, it will be added to the Wasatch Front Regional Map. She reported that Wasatch Front did not encourage any changes to the General Plan, which she said was surprising because the state is pushing for more high density, low income housing. She and Brandon will meet with Layton City's mayor and engineer next week to discuss the extension of South Bench Dr. into Layton.

		ompiete informatio	on In blue shaded cells	
Are there any Ma	ijor Project Risks?			
What are the Major Risks for this Project?		There are no majo	or risks associated with this p	лојесt,
Wh ₁	y should this project be co	nsidered a p	oriority over otl	her projects submitted?
Vhy should this project be selected or Why is his project necessary? (limit 1000 Characters)	traffic on SR-60 by helping divert local traffic on	nto South Bench Drive.	This takes the traffic loads of	n Drive). The intersection will help decrease the amount of ff of a State road and places it on City roads. South Bend y providing additional connectivity between communities
ubmission D o	e tails - All Projects <u>Must Have</u> Submitted	a "Letter of Intent	,u	Completed Forms Yes
All Project	s Must Complete the "20-25 Project E			Yes
All Projec	cts Must Complete the "20-25 Concept	t Project Cost Estir	nation Form"	Yes
CMAQ	Projects Must Complete the "CMAQ E	mission Analysis I	orm 2019"	No
	Include Drawings (Cross Section, Aer	ial or scale drawin	gs)	Yes
	e Project jpg's (Project Location, Aeria T <u>E</u> - The project pictures may be used to		-	Yes AC's and Others for Evaluation
	Excel fo	naterial in <u>a p</u> orms in Excel)	df format and the to Ben Wuthrich	<u>e Original Program Format</u> (exam 1
Email Address -	bwuthrich@wfrc.org	Mailing Ac	ldress - 295 North Jimmy D	Doolittle Road, Salt Lake City, Utah 84116
Submission I	Date of the Project Evaluation Co	ncept Report ar	ıd <u>all requested</u> Ma	aterial January 17, 2019
Mitigation/ Air	r Quality (CMAQ) program and be	e sponsored by a such as V/C, me	public agency. The odeled delay reducti	portation Program (STP) or the Congestie requested information in this "Projection, project field review, etc. will be used and recommendation.
hould you have	e any questions or require a this concept report, plea		stance concerning	Ben Wuthrich at (801) 363-4230 ext. 1121 (Office), (801) 647-3228 (Cell) or cmail at bwuthrich@wfrc.org
	t Evaluation Concept Reports" did your nit? (Including STP, CMAQ, and TAP)	2	100 miles	urisdiction's project submissions, what uld this project be to your Agency?

project portfolio or project may be removed from project evaluation and consideration.

Project Evaluation - Template

3 1/17/2019

project through the development process. Supplemental information neccessary to verify project data should accompany each



Fwd: South Bench Drive - Church Street -- Functional Classification Request

1 message

Wayne Bennion <a href="white:w

Fri, Oct 4, 2019 at 12:50 PM

Andrea.

Here is the first of the two e-mails I referred to for the South Bench Drive GRAMA request.

Thanks.

Wayne
Wayne Bennion
Director of Short Range Planning
and Programming
Wasatch Front Regional Council
801.363.4250 ext.1112
wbennion@wfrc.org

----- Forwarded message -----

Date: Fri, Jul 20, 2018 at 4:53 PM

Subject: South Bench Drive - Church Street -- Functional Classification Request

To: Wayne Bennion <wbennion@wfrc.org>, <awakil@utah.gov>

Cc: Steve Jackson <sjackson@laytoncity.org>, Jo Sjoblom <jsjoblom@southwebercity.com>, Dave Larson

<dlarson@southwebercity.com>, Ben Wuthrich <b downwro.org>, Jeff Oyler (Work) <joyler@daviscountyutah.gov>,

Barry Burton barry Burton barry@co.davis.ut.us, kbillings@wfrc.org

Wayne and Abdul.

It has come to our attention that the Church Street extension in Layton City and South Bench Drive in South Weber City have not been formally Functionally Classified. These roads will connect SR-193 to SR-60 and I-84. This project is identified in the 2040 RTP as Project #D-27. Because this project lists the future functional classification as a minor arterial, we were under the impression that these future roads were already functionally classified. Upon further investigation, it appears that they are not. Therefore, we are requesting that they become functionally classified.

As both South Weber City and Layton City are taking steps to plan for and construct this very important road connection, we are requesting that these roads be functionally classified as a **Major Collector**. This matches the current classification of Church Street south of SR-193. Although the street cross sections vary slightly between South Weber City and Layton City, they both provide for the road to function as a Major Collector.

South Weber City is providing the information and submitting the request, but has met with Layton City to get their endorsement and concurrence as evidenced by their signature on the Cover Letter.

The following are contained in the attached pdf:

FC Request Cover Letter – Signed by South Weber City and Layton City

- FC Change Request Form
- FC Request Map
 - o Shapefile of map is also attached to this email
- Cross Sections (for South Bench Drive)
- Fig. 11 from the Transportation CFP showing projected AADT report by Horrocks Engineers

Please let me know if you need anything else for this functional classification request to be processed and completed.

Thank you,

Brandon K. Jones | Principal

Jones & Associates Consulting Engineers

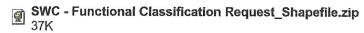
South Weber City Engineer

6080 Fashion Point Dr., South Ogden, UT 84403

P: (801) 476-9767 | C: (801) 391-9621



2 attachments



Functional Classification Request_Complete (7-20-2018).pdf 9430K



Fwd: South Bench Drive - Church Street -- Functional Classification Request

1 message

Wayne Bennion wbennion@wfrc.org
To: Andrea Pearson apearson@wfrc.org
Co: Andrew Gruber apruber@wfrc.org

Fri, Oct 4, 2019 at 12:50 PM

And the second.

Wayne Bennion
Director of Short Range Planning
and Programming
Wasatch Front Regional Council
801.363.4250 ext.1112
wbennion@wfrc.org

----- Forwarded message -----

Date: Tue, Jul 31, 2018 at 12:53 PM

Subject: RE: South Bench Drive - Church Street -- Functional Classification Request

To: Abdul Wakil <awakil@utah.gov>
Co: Wayne Bennion <wbennion@wfrc.org>

Ab,

Just for the record, my biggest concern about potentially only functionally classifying a portion of the whole alignment would be losing the regional nature/purpose of the road. If only portions are functionally classified at this point, the road may look more like a local road, when its whole purpose and intent is to provide regional connectivity. Just keep that in mind as you discuss this with WFRC and FHWA.

Thank you,

Brandon

From: Abdul Wakil [mailto:awakil@utah.gov] Sent: Tuesday, July 31, 2018 12:45 PM

To: Brandon Jones **Cc:** Wayne Bennion

Subject: Re: South Bench Drive - Church Street -- Functional Classification Request

Thanks Brandon. This is very helpful information in my review with FHWA.

Abdul Wakil, P.E.

Utah Department of Transportation

Transportation Performance Management Division

801-633-1034

On Tue, Jul 31, 2018 at 12:32 PM, Brandon Jones brandonj@jonescivil.com wrote:

Ab,

I've discussed this a little bit with Wayne Bennion over the phone, but here are my thoughts.

The first phase at the north end by I-84 is budgeted to be built next summer 2019. I anticipate the remaining portion to South Weber Drive (SR-60) would be built within the next 2 - 5 years. From South Weber Drive (SR-60) to 1075 East, my estimate would be 3 - 8 years. From 1075 East up the hillside and connecting to Church Street and/or Fairfield Road, my estimate would be 5 - 15 years.

A lot of this is difficult to estimate because it will be stimulated/driven by development. As long as the economy stays strong, I anticipate that the need for this road will be sooner than later, but if the economy slows down, then the need/drive will likely slow as well.

Hopefully, this gives you what you are looking for. If you have any other questions, please let me know.

Thanks.

Brandon

From: Abdul Wakil [mailto:awakil@utah.gov] Sent: Tuesday, July 31, 2018 10:31 AM

To: Brandon Jones

Subject: Re: South Bench Drive - Church Street -- Functional Classification Request

Hey Brandon,

What is the anticipated construction time frames for this road(when it will get constructed)?

Ab

Abdul Wakil, P.E.

Alberts

Project No.: 10 Description: Upsize Cottonwood Dr. to 8" line

						Cost Breakdown	_	
Item	Description	Units	Unit Price	Total Amount	Replacement/	Impact Fee	Developer Cost	ţ
7					Deficiency	Eligible	doises	1500
7	Construct 8" water line	3,100 lf	\$ 60	\$ 186,000	\$ 186,000	\$	Ý	
2	Install 8" gate valve	5 ea	3.000	15,000		•	n	ш
m	Connect to existing water line	•		000,00	000,51			н
) •	CONTINECT TO CAISING WATER HIDE	7 69	4,000	8,000	8.000			
4	Install fire hydrant	5 ea	6.000	30,000	000008			
L/C	Install water consise			00000	20,000	2		
) (ANA ISC INSTALL	X ea	1,800	14,400	14,400			
Q	Patch asphalt road	3,000 If	20	60.000	60,000			
7	Mobilization	-	00000	0000	000,00	a		š
		1.15	32,000	32,000	32,000			
			Subtotal \$	\$ 345,400	\$ 345,400	, \$1	¢	
	15% Engineering	& Construction Management	Management	51.810	51.810		·	
		0	(010/10			10
		10,	10% Contingency	34,540	34,540			6
			TOTAL \$	\$ 431.750 \$	\$ 431.750		4	
							ç	

otes:

Current conditions require that this line be upsized in order to meet fire flow demands at the end of the line. However, this project is not needed if a new line (north of South Weber Drive) is looped into this line.

CC 2019-10-15 Addendum#5

Slagger

Lisa Smith

From:

Angie Petty

Sent:

Wednesday, October 16, 2019 1:39 PM

To:

Lisa Smith

Subject:

Fwd: Community Council Meeting 10/15/19

Here is the email.

Thanks for everything!!

From: Cheri Slager < cherislager@gmail.com>
Sent: Tuesday, October 15, 2019 5:27:37 PM
To: Jo Sjoblom < JSjoblom@southwebercity.com>

Cc: Kent Hyer <KHyer@southwebercity.com>; Wayne Winsor <wwinsor@southwebercity.com>; Angie Petty

<apetty@southwebercity.com>; Blair Halverson
 southwebercity.com>; Merv Taylor

<MTaylor@southwebercity.com>

Subject: Community Council Meeting 10/15/19

I request that this email be read into the Community Council Meeting on October 15, 2019.

I have the following concerns over the possibility of approval of the proposed South Bench Drive.

- 1. I am concerned over the fact that this road will be built on unstable land prone to landslides, and that it could also disturb soil contamination from Hill Air Force Base.
- 2. I am concerned about the potential increased traffic traveling at high speeds through our city, through neighborhoods, and past South Weber Elementary School. I am also concerned about the increase of traffic on Deer Run Drive and the Frontage Road, especially with the proposed development of The Lofts on Deer Run. Increased traffic will also mean increased noise, pollution, and potential for accidents.
- 3. I am concerned about the cost of building and maintaining this road. With over a two million dollar price tag just to build, and additional costs for maintenance and upkeep, I feel the burden of cost would be passed along to the residents of the city, who recently experienced a one hundred percent tax increase already. The road has no way to generate revenue for the city that I've heard.
- 4. I am concerned about the effect that this road will have on many long-time residents who have maintained family farms/lands, as well as designated wetlands areas around the proposed site. I am also concerned about the effect this road will have on new residents that have built new homes on quiet neighborhood streets that will have an unanticipated three lane road (highway) running through their front yards.
- 5. I moved to South Weber almost thirty-five years ago because it is a quiet, bedroom community with beautiful views and landscape that surround it, but still with access to major cities within a five to ten minute drive. I love living in a community that's secluded from all of the noise, traffic, crime, and safety issues of a big city. I feel safe here, and I hope the City Council and Planning Commission will take these concerns, and those of other citizens who love South Weber as much as I do, into consideration before making such drastic changes to our landscape and environment. Sincerely,

Cheri and Scot Slager

2569 E. Deer Run Drive