



DF01. View east/upslope at alluvial fan with debris flow deposition zone (gray) and avalanche path ELC002.

Hazard ID #:	DF01
Hazard Type:	debris_flow
HIN:	225
Rating:	A
IRP 2006 Location:	1493
Frequency (yrs):	1-5
Predictability:	moderate
Material Volume (CY):	100-1000
Clast Size (ft):	1-2
Source Elev. (ft):	>1000
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	500+
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	1492+90
IRP 2006 North Margin:	1498+90
Photo #:	4098, 4099, 5146



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TITLE

GEOLOGIC HAZARD SUMMARY
ARRANGED BY IRP 2006 STATIONING
LYNN CANAL HIGHWAY PHASE I
ZONE 4 GEOTECHNICAL INVESTIGATION

ADOT / LYNN CANAL HWY ZONE 4 / AK

G-1



DF01. View south/down alignment at debris flow deposition zone at beach. Stake represents IRP 2006 1494+00.



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GEOLOGIC HAZARD SUMMARY
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 LYNN CANAL HIGHWAY PHASE I
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-2




DF02. View east/upslope
at debris flow channel and
avalanche path ELC003.

Hazard ID #:	DF02
Hazard Type:	debris_flow
HIN:	129
Rating:	A
IRP 2006 Location:	1515
Frequency (yrs):	1-5
Predictability:	moderate
Material Volume (CY):	<10
Clast Size (ft):	0-1
Source Elev. (ft):	2000-3000
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1514+50
IRP 2006 North Margin:	1515+50
Photo #:	1515, 2036, 5865

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION		
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DF02. View east/upslope up debris flow channel incised into overburden. Photo taken 50 ft right of IRP 2006 1515+00.

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION	
	DATE	11/27/06		
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DF03. View east/upslope at debris flow channel.

Hazard ID #:	DF03
Hazard Type:	debris_flow
HIN:	183
Rating:	A
IRP 2006 Location:	1517
Frequency (yrs):	0-1
Predictability:	moderate
Material Volume (CY):	<10
Clast Size (ft):	0-1
Source Elev. (ft):	2000-3000
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1517+00
IRP 2006 North Margin:	1518+20
Photo #:	3893, 5148, 5865, 6256

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION		
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DF03. View east/upslope at debris flow channel, deposition zone, and fan near IRP 2006 1518+00.

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION			
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DF03. View east/upslope up debris flow channel. Photo taken 10 ft right of IRP 2006 1517+50.



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GEOLOGIC HAZARD SUMMARY
ARRANGED BY IRP 2006 STATIONING
LYNN CANAL HIGHWAY PHASE I
ZONE 4 GEOTECHNICAL INVESTIGATION

ADOT / LYNN CANAL HWY ZONE 4 / AK

G-7



RS01. View east/upslope at 2001 rockslide and avalanche path ELC003-1.

Hazard ID #:	RS01
Hazard Type:	rock_slide
HIN:	219
Rating:	A
IRP 2006 Location:	1522
Frequency (yrs):	unknown(>25?)
Predictability:	unpredictable
Material Volume (CY):	100-1000
Clast Size (ft):	4+
Source Elev. (ft):	>1000
Centerline Slope:	open_bedrock_slope
Alignment Location:	deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	200-500
Vegetation:	denuded
Deciduous Trees:	no
IRP 2006 South Margin:	1521+80
IRP 2006 North Margin:	1525+50
Photo #:	4123, 4124, 4126, 5148, 5865



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GEOLOGIC HAZARD SUMMARY
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 LYNN CANAL HIGHWAY PHASE I
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-8



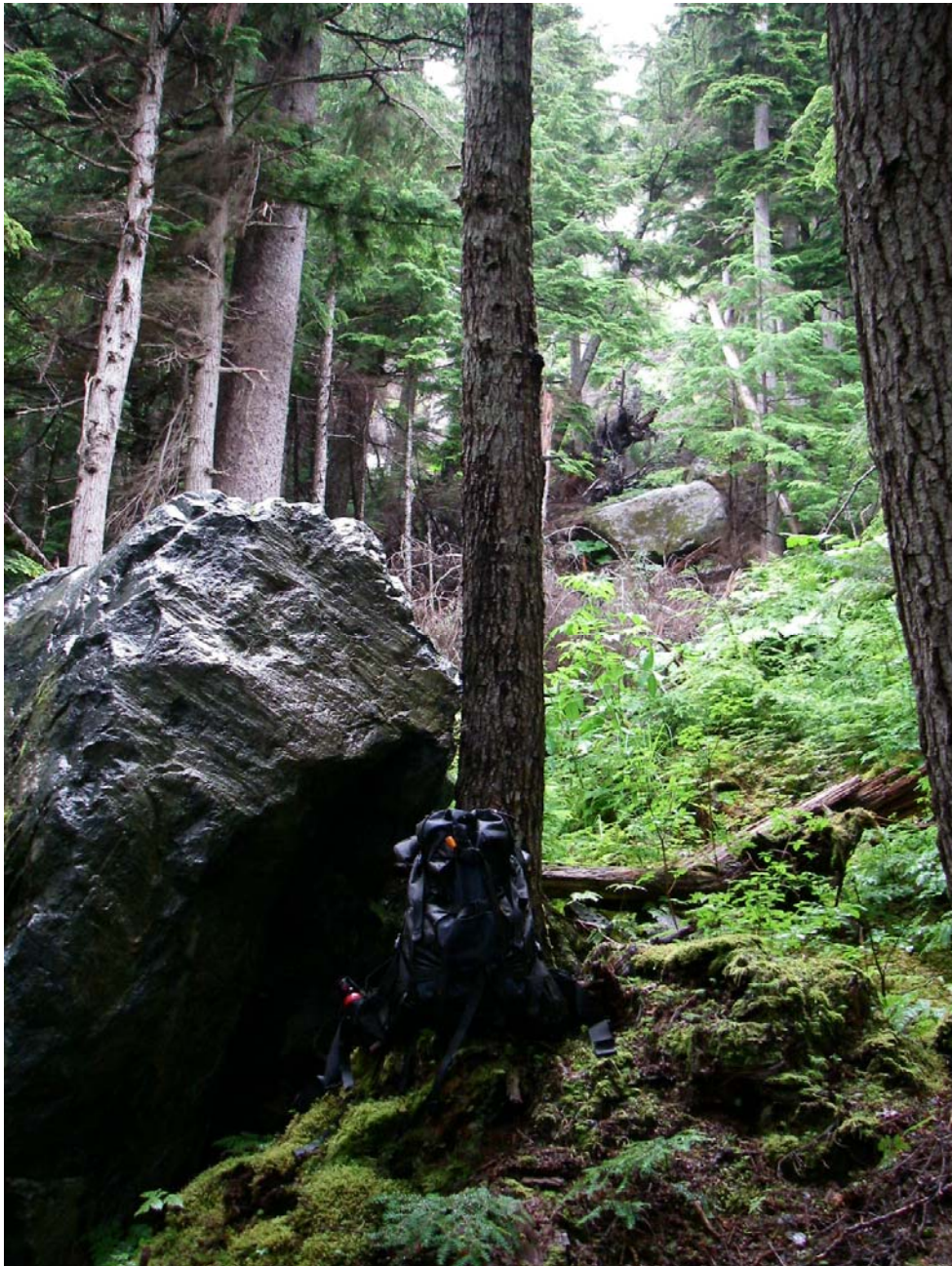
RS01. View east/upslope of area directly under rockslide. Some debris approaches the IRP 2006 alignment which is located just east/upslope of the beach.




RS01. View east/upslope of 40 ft diameter boulder at bottom of rockslide and avalanche path ELC003-1. Photo taken 360 ft right of IRP 2006 1522+00.



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RS01. View east/upslope of fresh rockslide mega-boulder at southwest (downslope and down alignment) corner of rockslide and avalanche path ELC003-1. Photograph taken 360 ft right of IRP 2006 1522+50.

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION	ADOT / LYNN CANAL HWY ZONE 4 / AK	G-10
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RF01. View east/upslope at rockfall hazard area.

Hazard ID #:	RF01
Hazard Type:	rockfall
HIN:	147
Rating:	C
IRP 2006 Location:	1549
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	3-4
Source Elev. (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1549+00
IRP 2006 North Margin:	1552+50
Photo #:	4212, 4214, 5148

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION			
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RF01. Basalt cliff that is the origin of rockfall hazard. Photo taken 350 ft right of IRP 2006 1551+00.



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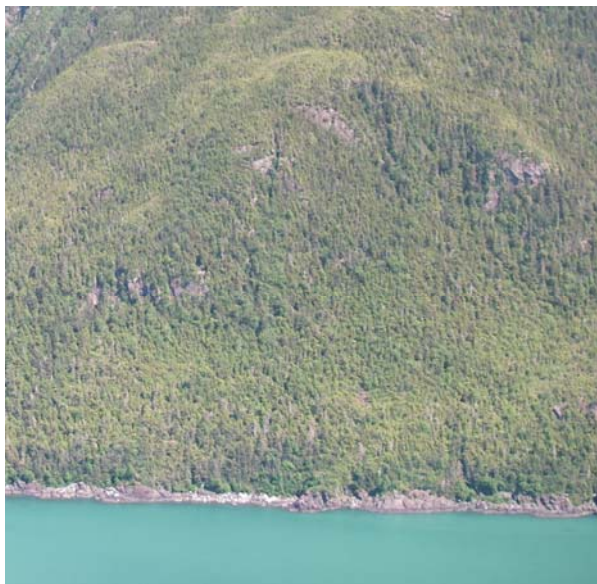
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GEOLOGIC HAZARD SUMMARY
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G-12



RF02. View east/upslope at rockfall hazard area.

Hazard ID #:	RF02
Hazard Type:	rockfall
HIN:	111
Rating:	C
Station Location:	1553
Frequency (yrs):	5-25
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	0-1
Source Elev. (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1553+00
IRP 2006 North Margin:	1554+00
Photo #:	3049, 5149



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**GEOLOGIC HAZARD SUMMARY
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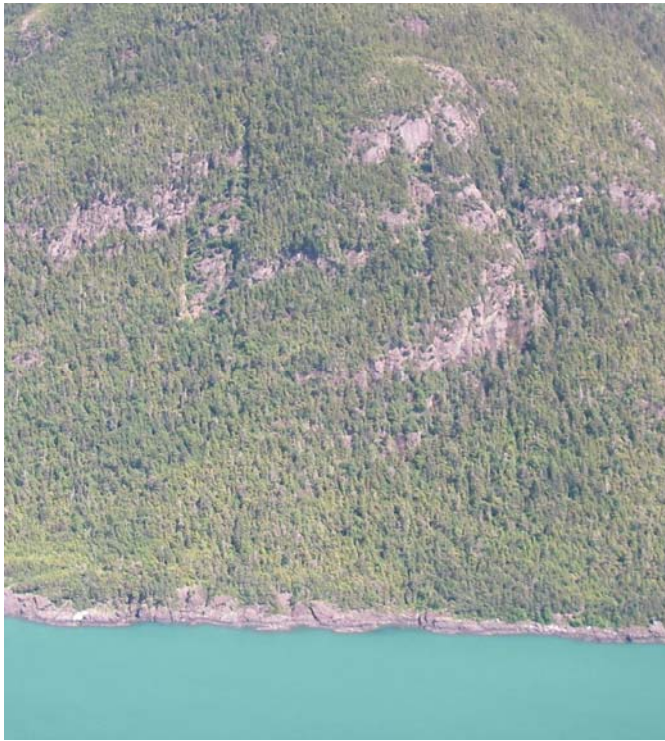
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G-13



RF02. View west/downslope at rockfall deposition. Photo taken 350 ft right of IRP 2006 1552+00.

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION		
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RF03. View east/upslope at rockfall area.



RF03. View east/upslope at rockfall area.

Hazard ID #:	RF03
Hazard Type:	rockfall
HIN:	129
Rating:	B
IRP 2006 Location:	1586
Frequency (yrs):	5-25
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elev. (ft):	100-500
Centerline Slope:	single_channel
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1584+50
IRP 2006 North Margin:	1587+00
Photo #:	4259, 5873



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G-15



RF04. View east/upslope at rockfall area.



RF04. Base of vertical basalt cliff creating rockfall hazard. Photo taken 400 ft right of IRP 2006 1610+00.

Hazard ID #:	RF04
Hazard Type:	rockfall
HIN:	183
Rating:	B
IRP 2006 Location:	1609
Frequency (yrs):	unknown (5-25?)
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elev. (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	500+
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1605+50
IRP 2006 North Margin:	1611+10
Photo #:	4245, 4246, 4247, 4249



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G-16

Hazard ID #:	RF05
Hazard Type:	rockfall
HIN:	105
Rating:	B
IRP 2006 Location:	1657
Frequency (yrs):	5-25
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elev. (ft):	<100
Centerline Slope:	open_bedrock_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1657+00
IRP 2006 North Margin:	1658+00
Photo #:	1086, 3904-3908, 5154, 6266



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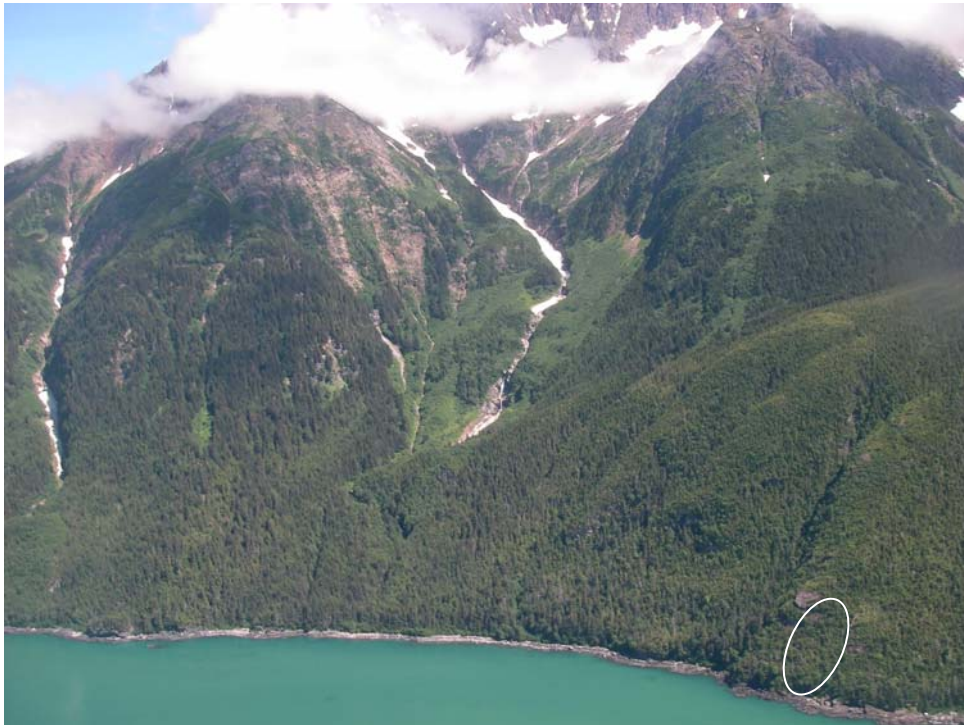
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GEOLOGIC HAZARD SUMMARY
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G-17



RF05. View east/upslope at rockfall hazard area. Rockfall occurs near beach at base of gully in lower right of photo.



RF05. View east/upslope at basalt cliffs and rockfall. Photo taken 50 ft left of IRP 2006 1657+00.



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G-18



RF05. View west/downslope at rockfall from basalt cliffs. Photo taken at centerline of IRP 2006 1657+50.



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G-19



DF04. View east/upslope at debris flow channel, incision visible as gully.

Hazard ID #:	DF04
Hazard Type:	debris_flow
HIN:	117
Rating:	B
IRP 2006 Location:	1670
Frequency (yrs):	5-25
Predictability:	moderate
Material Volume (CY):	10-100
Clast Size (ft):	0-1
Source Elev. (ft):	1000-2000
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1668+50
IRP 2006 North Margin:	1670+50
Photo #:	3875



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G-20



DF04. Debris flow deposit at IRP 2006 1670+50.



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G-21



DF05. Debris flow channel visible as incised gully through trees in lower part of photo, left of center.

Hazard ID #:	DF05
Hazard Type:	debris_flow
HIN:	129
Rating:	A
IRP 2006 Location:	1674
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	0-1
Source Elev. (ft):	1000-2000
Centerline Slope:	single_channel
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	no
IRP 2006 South Margin:	1673+80
IRP 2006 North Margin:	1675+30
Photo #:	6203, 6204



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G-22



DF05. View north/up alignment along debris flow incision and levee.
Photo taken 40 ft right of IRP 2006 1674+20.



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G-23



DF06. View east/upslope at debris flow channel and avalanche path ELC005.

Hazard ID #:	DF06
Hazard Type:	debris_flow
HIN:	201
Rating:	A
IRP 2006 Location:	1678
Frequency (yrs):	0-1
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	0-1
Source Elev. (ft):	2000-3000
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1677+00
IRP 2006 North Margin:	1679+00
Photo #:	3876



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GEOLOGIC HAZARD SUMMARY
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G-24



DF06. View southeast (upslope and down alignment) across debris flow deposition zone at tide line. Photo taken 20 ft left of IRP 2006 1677+50.



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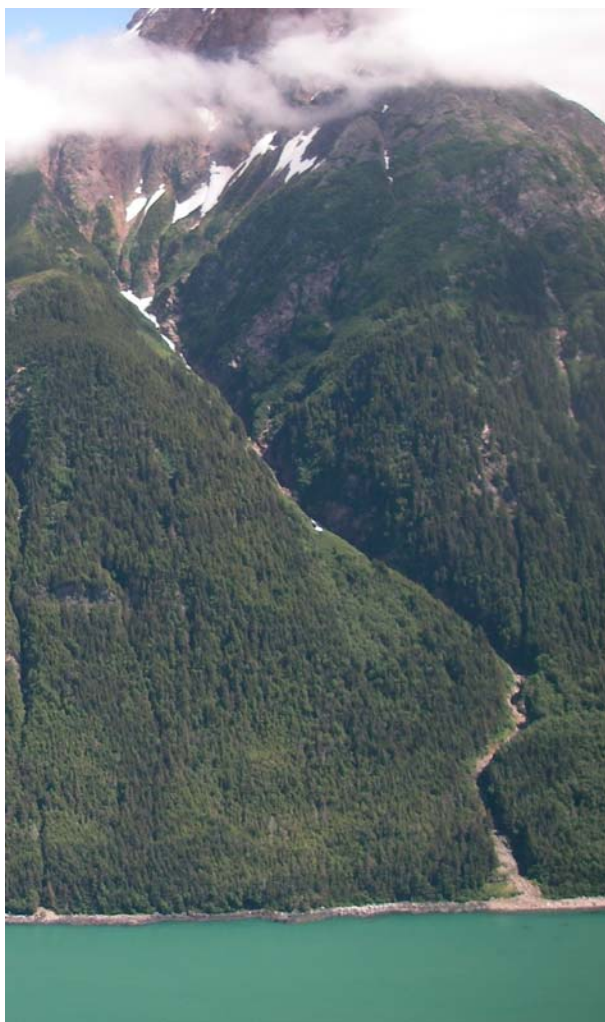
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**GEOLOGIC HAZARD SUMMARY
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G-25



DF07. View east/upslope of debris flow channel and avalanche path ELC006.

Hazard ID #:	DF07
Hazard Type:	debris_flow
HIN:	171
Rating:	A
IRP 2006 Location:	1704
Frequency (yrs):	1-5
Predictability:	moderate
Material Volume (CY):	100-1000
Clast Size (ft):	1-2
Source Elev. (ft):	>1000
Centerline Slope:	multi_channel
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	1701+50
IRP 2006 North Margin:	1705+50
Photo #:	4366, 5155



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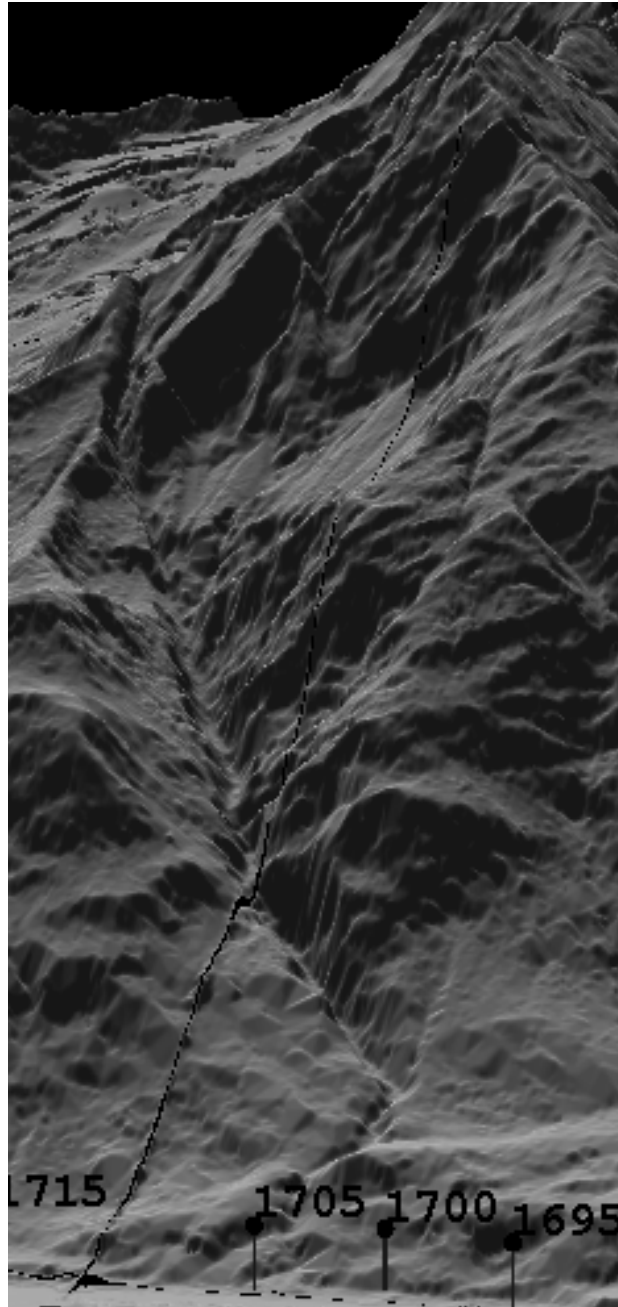
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G-26




DF07. Path and terminus of debris flow channel. IRP 2006 alignment located on beach.

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DF07. LIDAR image of debris flow channel and avalanche path ELC006.

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DF08. View east/upslope at debris flow channel and avalanche path ELC007.

Hazard ID #:	DF08
Hazard Type:	debris_flow
HIN:	129
Rating:	A
IRP 2006 Location:	1720
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elev. (ft):	>1000
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	1719+90
IRP 2006 North Margin:	1720+80
Photo #:	1126, 5156

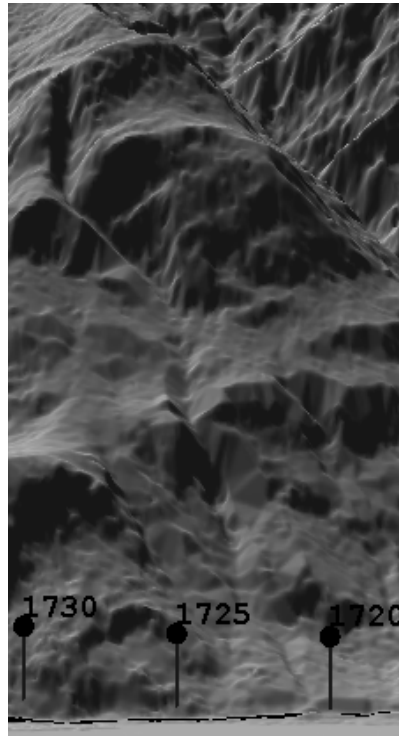


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GEOLOGIC HAZARD SUMMARY
ARRANGED BY IRP 2006 STATIONING
 LYNN CANAL HIGHWAY PHASE I
 ZONE 4 GEOTECHNICAL INVESTIGATION

ADOT / LYNN CANAL HWY ZONE 4 / AK


G-29



DF08. Bare earth LIDAR image of debris flow path.




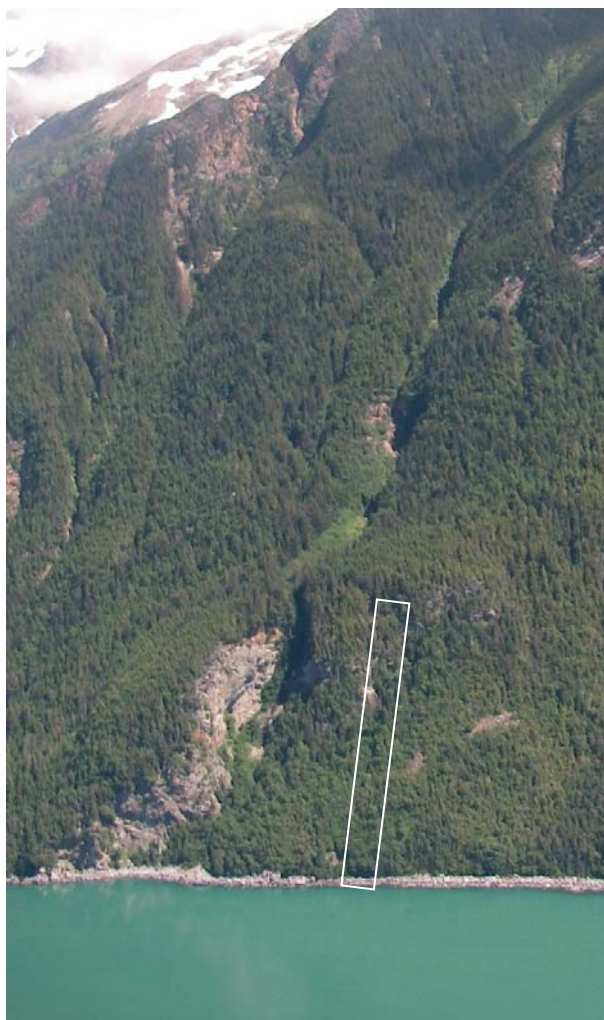
DF08. View east/upslope at debris flow chute and avalanche path ELC007, 490 ft east of IRP 2006 1720+50.

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION		
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DF08. Debris flow deposition fan and avalanche path ELC007 at centerline at IRP 2006 1720+00.

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION			
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	CHECK	RGD				
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RF06. View east/upslope at rockfall area.

Hazard ID #:	RF06
Hazard Type:	rockfall
HIN:	183
Rating:	A
IRP 2006 Location:	1730
Frequency (yrs):	0-1
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	3-4
Source Elev. (ft):	100-500
Centerline Slope:	open_bedrock_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1729+90
IRP 2006 North Margin:	1730+80
Photo #:	4674, 6206



CADD	ALF
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TITLE

GEOLOGIC HAZARD SUMMARY
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G-32



RF06. View east/upslope at rockfall zone. IRP 2006 alignment located upslope of beach.



RF06. View west/downslope at rockfall. IRP 2006 1730+00 located at point where photo was taken.



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DF09. View east/upslope at debris flow channel and avalanche path ELC008.

Hazard ID #:	DF09
Hazard Type:	debris_flow
HIN:	153
Rating:	A
IRP 2006 Location:	1733
Frequency (yrs):	unknown (1-5?)
Predictability:	low
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elev. (ft):	>1000
Centerline Slope:	single_channel
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1732+50
IRP 2006 North Margin:	1734+40
Photo #:	3307



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GEOLOGIC HAZARD SUMMARY
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LYNN CANAL HIGHWAY PHASE I
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-34



DF09. View east/upslope at debris flow path and avalanche path ELC008 through dense deciduous trees.



DF09. Debris flow and talus cone at base of debris flow and avalanche path ELC008 located at IRP 2006 1733+00.



FILE No. GEO_HAZ_SUMM.PPT
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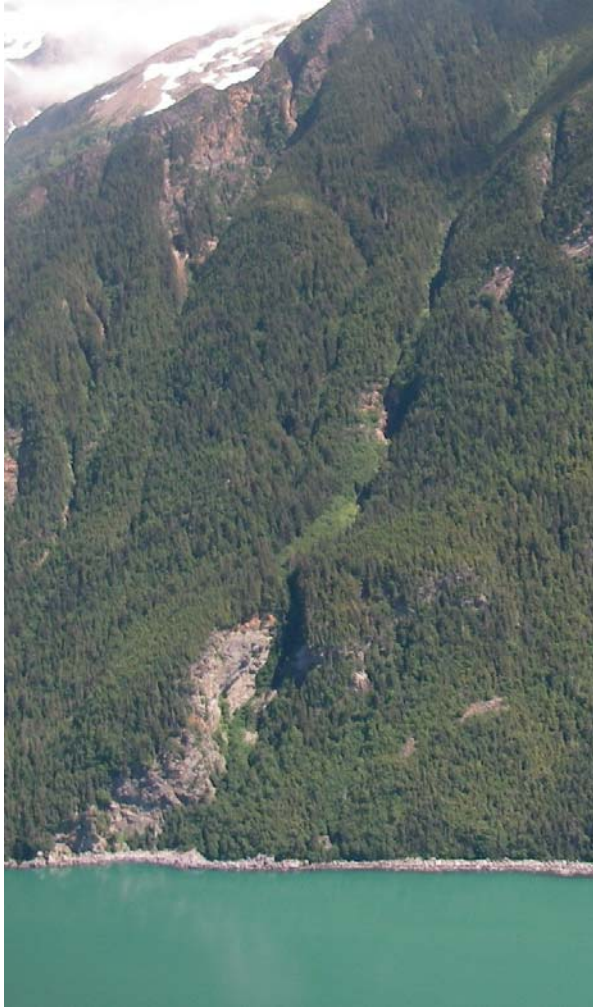
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TITLE

GEOLOGIC HAZARD SUMMARY
ARRANGED BY IRP 2006 STATIONING
LYNN CANAL HIGHWAY PHASE I
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G-35



RF07. View east/upslope at rockfall hazard area.

Hazard ID #:	RF07
Hazard Type:	rockfall
HIN:	279
Rating:	A
IRP 2006 Location:	1734
Frequency (yrs):	0-1
Predictability:	unpredictable
Material Volume (CY):	10-100
Clast Size (ft):	4+
Source Elev. (ft):	500-1000
Centerline Slope:	open_bedrock_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	500+
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1724+80
IRP 2006 North Margin:	1739+80
Photo #:	4674



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TITLE

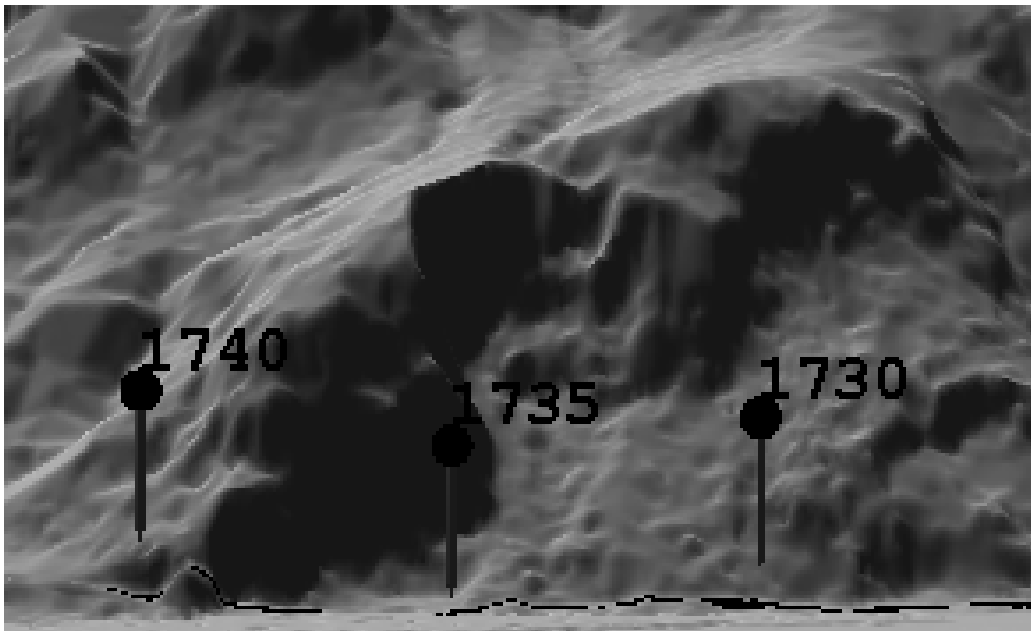
GEOLOGIC HAZARD SUMMARY
ARRANGED BY IRP 2006 STATIONING
 LYNN CANAL HIGHWAY PHASE I
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G-36



RF07. View east/upslope at 500 ft high gneiss cliffs with strong jointing and rockfall.



RF07. LIDAR image of rockfall hazard area.



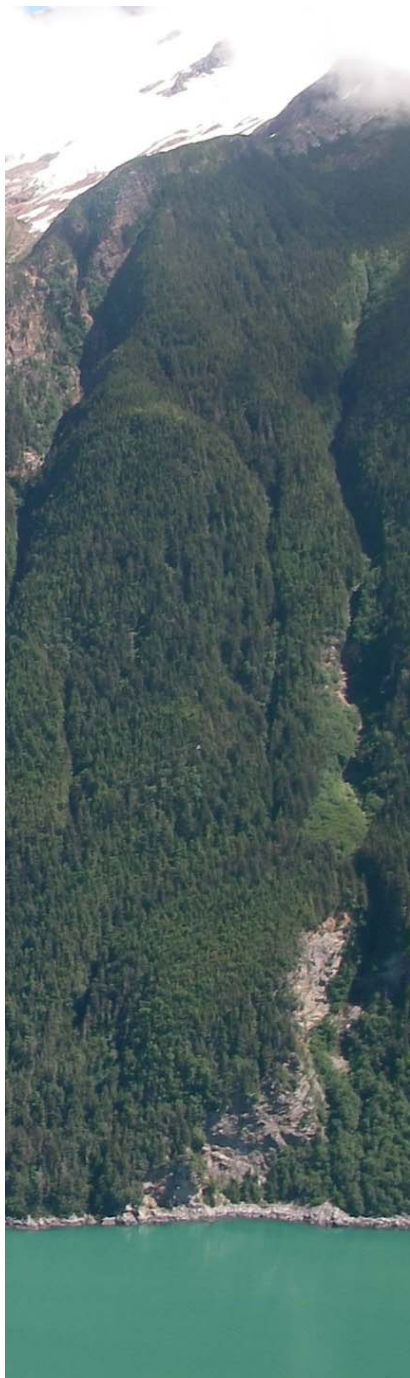
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G-37



DF10. View east/upslope
at debris flow channel.

Hazard ID #:	DF10
Hazard Type:	debris_flow
HIN:	129
Rating:	A
IRP 2006 Location:	1743
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	0-1
Source Elev. (ft):	>1000
Centerline Slope:	multi_channel
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	no
IRP 2006 South Margin:	1742+50
IRP 2006 North Margin:	1743+40
Photo #:	4745-4748



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 LYNN CANAL HIGHWAY PHASE I
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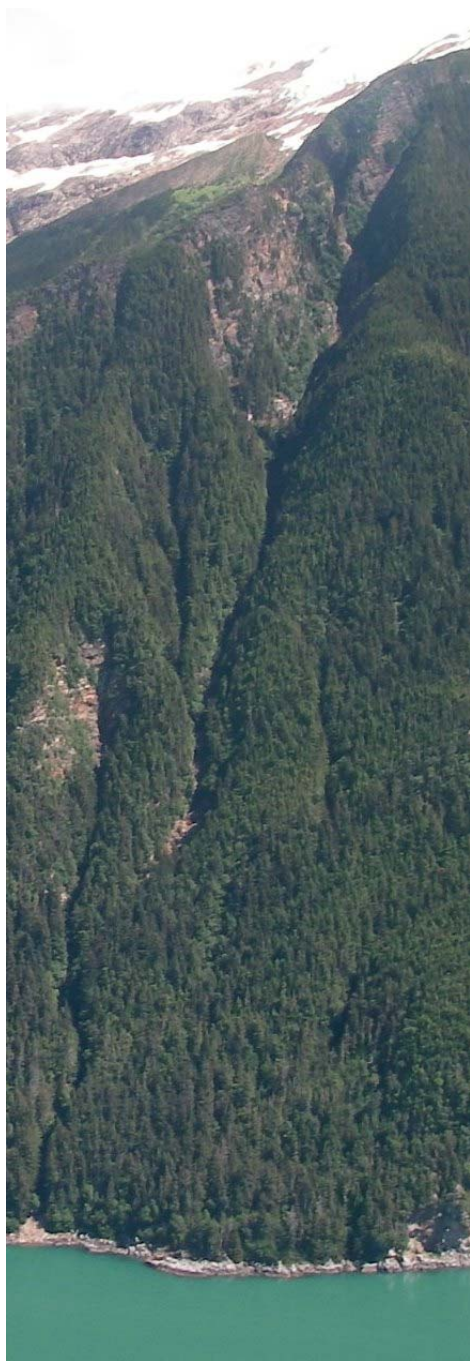
DF10. View southwest (downslope and down alignment) at multichannel debris flow deposits at centerline at IRP 2006 1743+00.



DF10. View east/upslope at debris flow terminus and deposition zone.



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DF11. View east/upslope at debris flow channel and avalanche path ELC009.

Hazard ID #:	DF11
Hazard Type:	debris_flow
HIN:	129
Rating:	A
IRP 2006 Location:	1748
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	2-3
Source Elev. (ft):	>1000
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	1746+40
IRP 2006 North Margin:	1748+20
Photo #:	4741, 4742, 5157



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GEOLOGIC HAZARD SUMMARY
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G-40



DF11. View east/upslope at debris flow deposition zone.



DF11. View east/upslope at debris flow channel and avalanche path ELC009. Photo taken at centerline at IRP 2006 1747+00.



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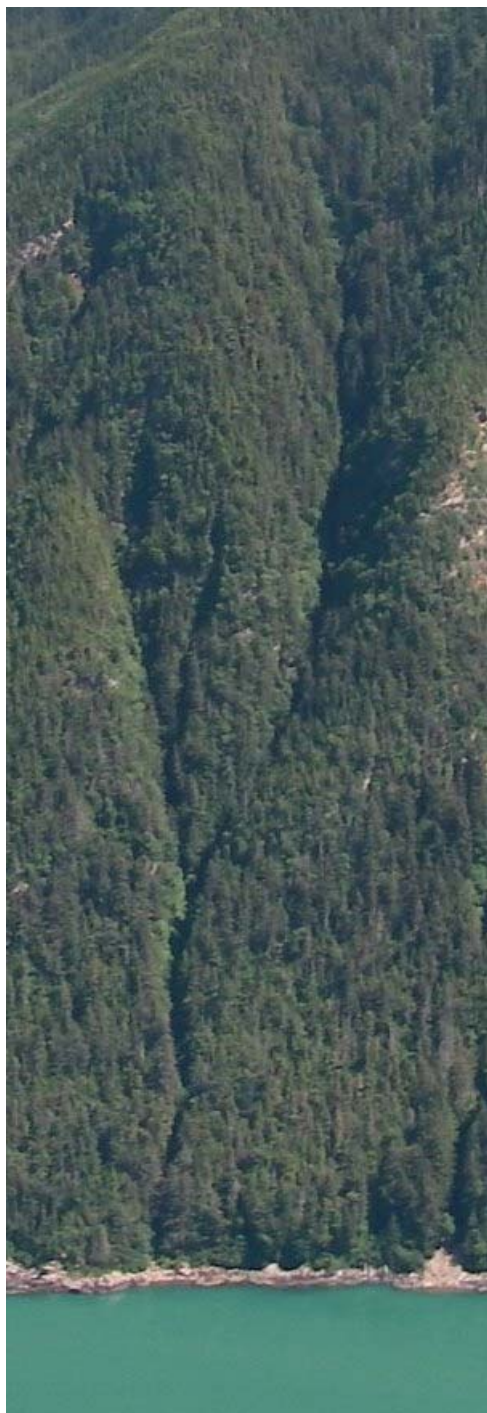
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DF12. View east/upslope at debris flow channel and avalanche path ELC010.

Hazard ID #:	DF12
Hazard Type:	debris_flow
HIN:	111
Rating:	A
IRP 2006 Location:	1752
Frequency (yrs):	5-25
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	2-3
Source Elev. (ft):	>1000
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1751+00
IRP 2006 North Margin:	1752+00
Photo #:	4738, 4739, 5157



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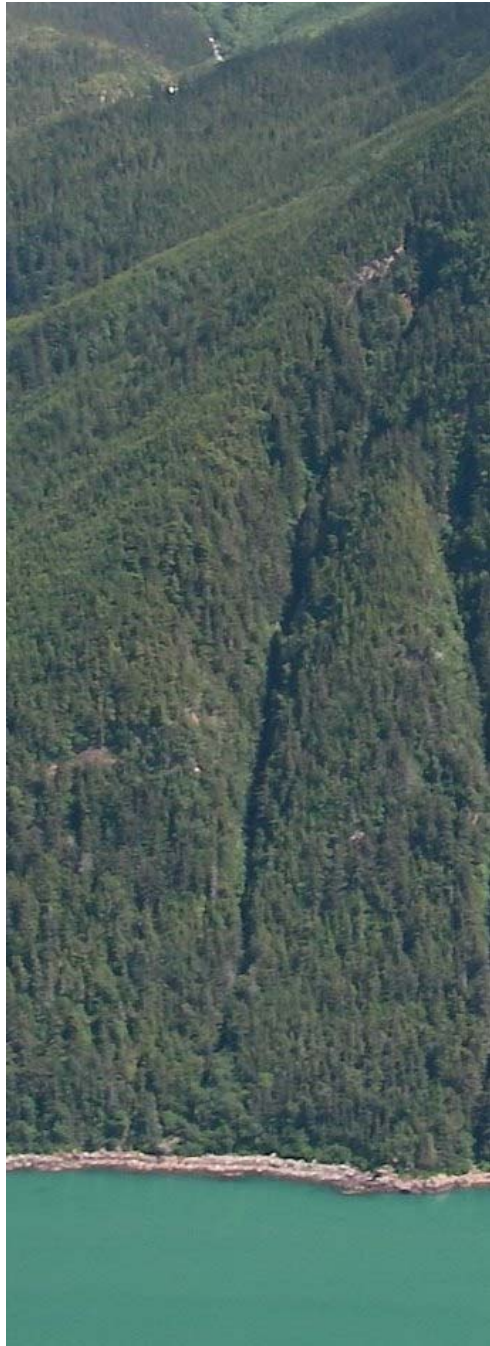
ADOT / LYNN CANAL HWY ZONE 4 / AK

G-42




DF12. View east/upslope at debris flow channel and avalanche path ELC010. Photo taken 85 ft right of IRP 2006 1751+50.

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DF13. View east/upslope at debris flow channel and avalanche path ELC011.

Hazard ID #:	DF13
Hazard Type:	debris_flow
HIN:	129
Rating:	A
IRP 2006 Location:	1757
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	2-3
Source Elev. (ft):	>1000
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	1756+10
IRP 2006 North Margin:	1757+50
Photo #:	4736, 4737, 5157

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION			
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DF13. View east/upslope at debris flow channel and avalanche path ELC011. Photo taken 30 ft right of IRP 2006 1757+00.



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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-45



RF08. View east/upslope at rockfall hazard.

Hazard ID #:	RF08
Hazard Type:	rockfall
HIN:	183
Rating:	A
IRP 2006 Location:	1759
Frequency (yrs):	5-25
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elev. (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	500+
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	1759+30
IRP 2006 North Margin:	1767+00
Photo #:	5039, 5040, 5041, 5157, 6209



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GEOLOGIC HAZARD SUMMARY
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G-46



RF08. View southwest (downslope and down alignment) at rockfall debris at IRP 2006 1760+00.



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RF09. View east/upslope at area of greater frequency rockfall within rockfall area RF08.

Hazard ID #:	RF09
Hazard Type:	rockfall
HIN:	129
Rating:	A
IRP 2006 Location:	1763
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	2-3
Source Elev. (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1763+20
IRP 2006 North Margin:	1763+80
Photo #:	3878



CADD	ALF
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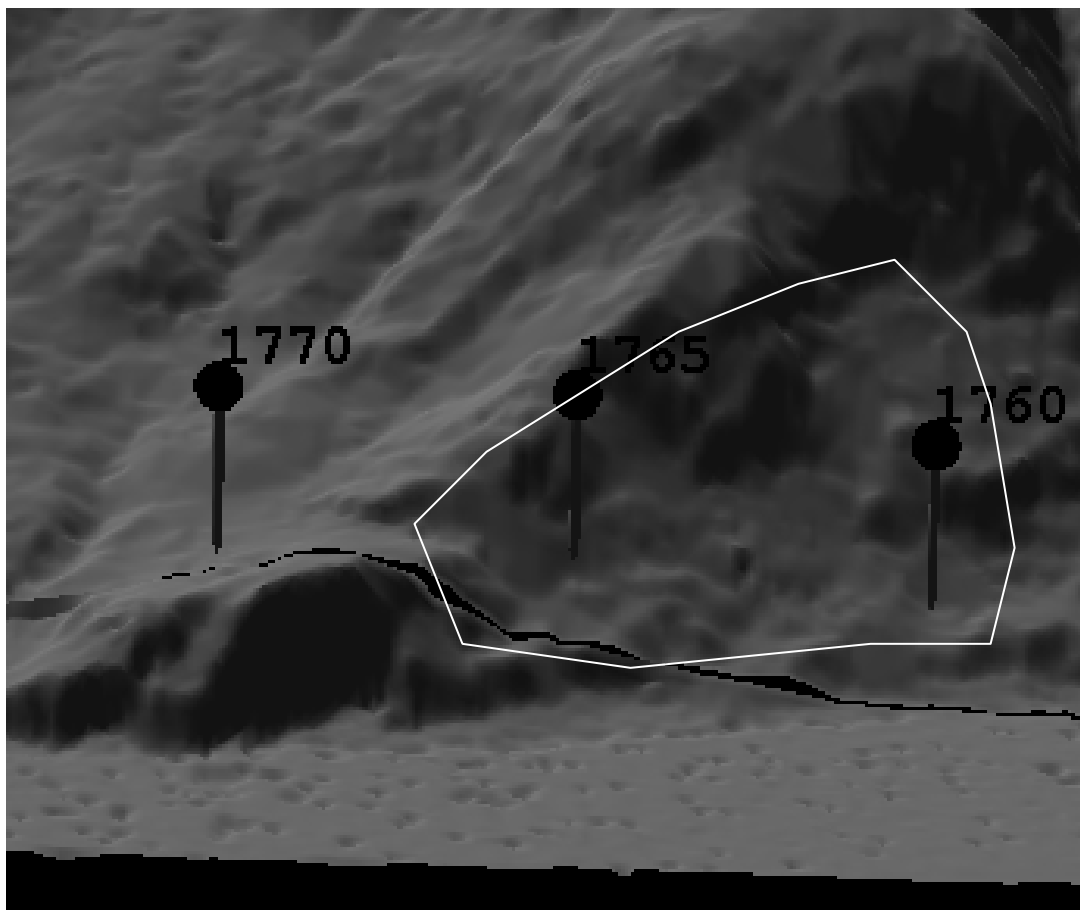
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RF09. LIDAR image of rockfall hazard.



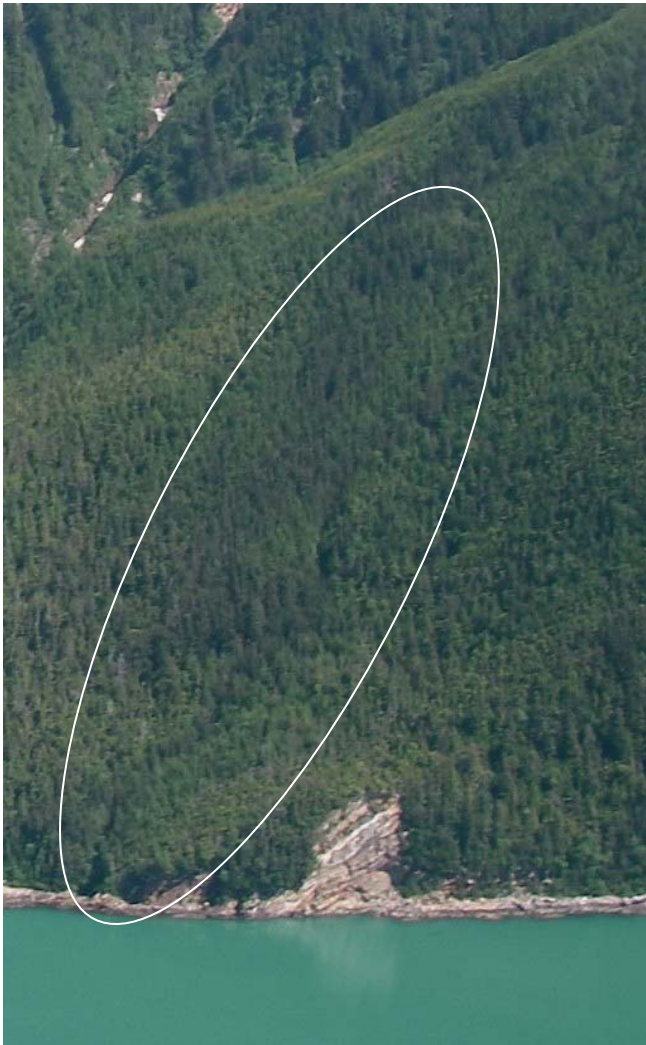
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G-49



DF14. View east/upslope at debris flow channel.

Hazard ID #:	DF14
Hazard Type:	debris_flow
HIN:	111
Rating:	A
IRP 2006 Location:	1773
Frequency (yrs):	25+
Predictability:	moderate
Material Volume (CY):	10-100
Clast Size (ft):	2-3
Source Elev. (ft):	>1000
Centerline Slope:	single_channel
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	1772+50
IRP 2006 North Margin:	1773+60
Photo #:	2093, 4714



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DF14. View east/upslope at debris flow channel. Old levee walls visible on far left and right sides of photo. Photo taken 30 ft left of IRP 2006 1773+00.



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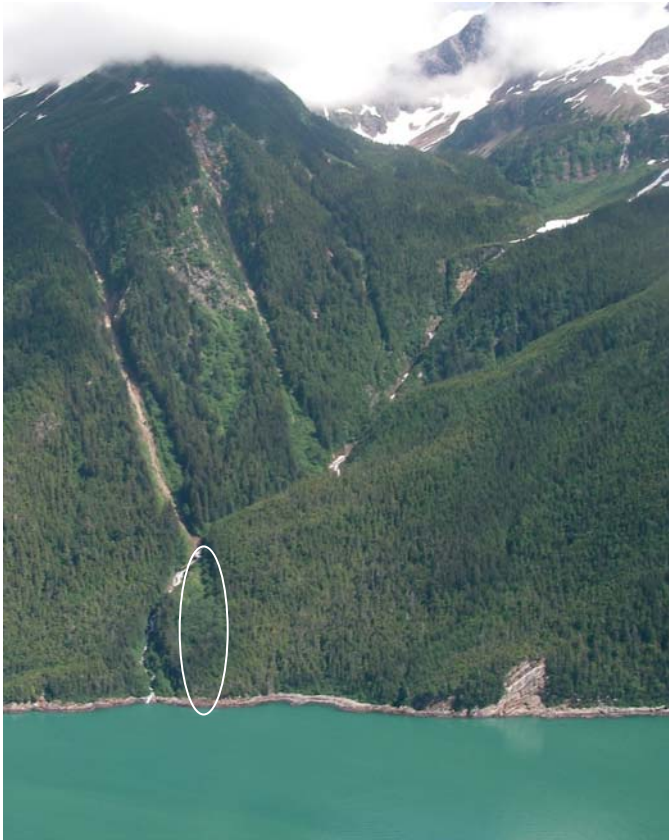
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DF15. View east/upslope at debris flow channel and avalanche path ELC012.

Hazard ID #:	DF15
Hazard Type:	debris_flow
HIN:	207
Rating:	B
IRP 2006 Location:	1782
Frequency (yrs):	5-25
Predictability:	moderate
Material Volume (CY):	1000+
Clast Size (ft):	2-3
Source Elev. (ft):	>1000
Centerline Slope:	multi_channel
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1782+00
IRP 2006 North Margin:	1783+00
Photo #:	3912



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DF15. View east/upslope at debris flow channel.



DF15. View east/upslope at abandoned/infrequently occupied debris flow path at IRP 2006 1782+00. During large events, this is believed to be an overflow channel from the adjacent, active debris flow channel at IRP 2006 1784+00.



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DF16. View east/upslope at debris flow channel and avalanche path ELC012.

Hazard ID #:	DF16
Hazard Type:	debris_flow
HIN:	225
Rating:	A
IRP 2006 Location:	1783
Frequency (yrs):	1-5
Predictability:	moderate
Material Volume (CY):	1000+
Clast Size (ft):	2-3
Source Elev. (ft):	>1000
Centerline Slope:	multi_channel
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1783+00
IRP 2006 North Margin:	1785+30
Photo #:	1141, 2091, 5158



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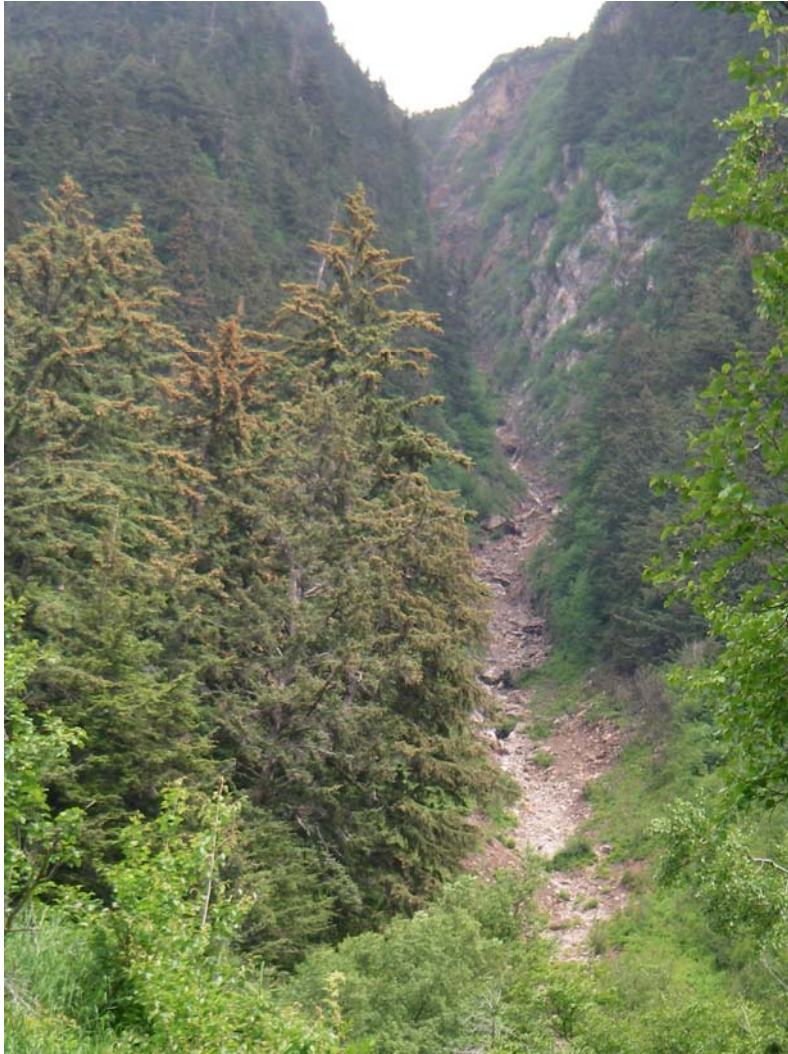
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DF16. View east/upslope at tributary to debris flow channel and avalanche path ELC012. Photo taken 450 ft right of IRP 2006 1784+00.

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DF17. View north/up alignment at margin of old debris flow and recent debris flow. Photo taken at centerline at IRP 2006 1825+00.

Hazard ID #:	DF17
Hazard Type:	debris_flow
HIN:	147
Rating:	B
IRP 2006 Location:	1824
Frequency (yrs):	25+
Predictability:	low
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elev. (ft):	2000-3000
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1824+10
IRP 2006 North Margin:	1825+50
Photo #:	1186, 4012, 4015, 5159, 6232



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DF18. Debris flow and avalanche path
ELC013.



DF18. View east/upslope at debris flow.

Hazard ID #:	DF18
Hazard Type:	debris_flow
HIN:	147
Rating:	A
IRP 2006 Location:	1826
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	0-1
Source Elev. (ft):	2000-3000
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1825+50
IRP 2006 North Margin:	1827+50
Photo #:	1186, 4012, 4015, 5159, 6232



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GEOLOGIC HAZARD SUMMARY
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ADOT / LYNN CANAL HWY ZONE 4 / AK

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DF18. View east/upslope at debris flow and avalanche path
ELC013. Photo taken 100 ft right of IRP 2006 1826+00.



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G-58



DF18. View southwest (downslope and down alignment) down a major creek, debris flow fan, and recent deposits that buried small conifer trees. Photo taken 50 ft right of IRP 2006 1826+50. Fan continues across alignment.



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DF19. View east/upslope at debris flow channel and avalanche path ELC014.

Hazard ID #:	DF19
Hazard Type:	debris_flow
HIN:	153
Rating:	A
IRP 2006 Location:	1847
Frequency (yrs):	5-25
Predictability:	low
Material Volume (CY):	10-100
Clast Size (ft):	0-1
Source Elev. (ft):	3000+
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	1845+30
IRP 2006 North Margin:	1849+90
Photo #:	4809, 4812, 4830, 5160



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G-60



DF19. View east/upslope from beach at debris flow and avalanche path ELC014. Photo taken 190 ft left of IRP 2006 1847+50.



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DF20. View east/upslope at debris flow channel.

Hazard ID #:	DF20
Hazard Type:	debris_flow
HIN:	153
Rating:	B
IRP 2006 Location:	1852
Frequency (yrs):	5-25
Predictability:	low
Material Volume (CY):	10-100
Clast Size (ft):	0-1
Source Elev. (ft):	3000+
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	1852+00
IRP 2006 North Margin:	1853+10
Photo #:	1210, 5160



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DF20. View east/upslope at debris channel. Stream is poorly channelized as a result of a high sediment/debris supply. Photo taken at centerline at IRP 2006 1852+50.



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G-63



RF10. View east/upslope at rockfall.

Hazard ID #:	RF10
Hazard Type:	rockfall
HIN:	111
Rating:	C
IRP 2006 Location:	1854
Frequency (yrs):	unknown (5-25?)
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	2-3
Source Elev. (ft):	100-500
Centerline Slope:	other
Alignment Location:	below_deposition zone
Impact Alignment:	no
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1853+30
IRP 2006 North Margin:	1854+30
Photo #:	4816



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G-64



RF10. View at basalt cliffs that create the rockfall zone. Photo taken 775 ft right of IRP 2006 alignment.



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G-65



RF11. View east/upslope at rockfall area.



RF11. View east/upslope at minor rockfall hazard located at centerline at IRP 2006 1865+00.

Hazard ID #:	RF11
Hazard Type:	rockfall
HIN:	105
Rating:	B
IRP 2006 Location:	1865
Frequency (yrs):	5-25
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	2-3
Source Elev. (ft):	<100
Centerline Slope:	open_soil_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1864+80
IRP 2006 North Margin:	1866+00
Photo #:	6234



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G-66



DF21. View west/downslope at debris flow deposition zone, 250 ft left of IRP 2006 1894+00.

Hazard ID #:	DF21
Hazard Type:	debris_flow
HIN:	123
Rating:	B
IRP 2006 Location:	1894
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	<10
Clast Size (ft):	0-1
Source Elev. (ft):	2000-3000
Centerline Slope:	single_channel
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1893+30
IRP 2006 North Margin:	1894+40
Photo #:	5161, 6238



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DF21. View east/upslope at moderate slope old growth covering the debris flow channel.



DF21. View east/upslope at debris flow channel 120 ft right of IRP 2006 1895+00.



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G-68



RF12. View east/upslope at rockfall area.

Hazard ID #:	RF12
Hazard Type:	rockfall
HIN:	105
Rating:	C
IRP 2006 Location:	1915
Frequency (yrs):	unknown (>25?)
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elev. (ft):	100-500
Centerline Slope:	-
Alignment Location:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1915+20
IRP 2006 North Margin:	1916+50
Photo #:	5162



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G-69



RF13. View east/upslope at rockfall area.

Hazard ID #:	RF13
Hazard Type:	rockfall
HIN:	111
Rating:	C
IRP 2006 Location:	1932
Frequency (yrs):	0-1
Predictability:	moderate
Material Volume (CY):	<10
Clast Size (ft):	1-2
Source Elev. (ft):	100-500
Centerline Slope:	-
Alignment Location:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1931+80
IRP 2006 North Margin:	1933+00
Photo #:	5162



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G-70

Hazard ID #:	RF14
Hazard Type:	rockfall
HIN:	129
Rating:	B
IRP 2006 Location:	1935
Frequency (yrs):	unknown (5-25?)
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	2-3
Source Elev. (ft):	100-500
Centerline Slope:	-
Alignment Location:	below_deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	1933+70
IRP 2006 North Margin:	1953+00
Photo #:	5163, 5909, 5910, 5911



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G-71



RF14. View east/upslope at moderate rockfall hazard from IRP 2006 1933+00 to 1953+00, below massive gneiss cliffs.



RF14. View west/downslope at fresh rockfall at IRP 2006 1933+00, 3-4 ft diameter boulders.



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G-72

Hazard ID #:	RF15
Hazard Type:	rockfall
HIN:	129
Rating:	B
IRP 2006 Location:	1948
Frequency (yrs):	5-25
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elev. (ft):	100-500
Centerline Slope:	other
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	1946+80
IRP 2006 North Margin:	1949+00
Photo #:	5163

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RF15. View east/upslope at rockfall area within rockfall area RF14.



RF15. View east/upslope at large cliffs, fresh rockfall scars, 240 ft right of IRP 2006 1948+00.



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RF15. View north/up alignment across deposit of fresh 2 ft diameter rockfall. Photo taken 240 ft east of IRP 2006 1948+00.



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G-75



DF22. View east/upslope at debris flow channel and avalanche path ELC016.



DF22. View east/upslope at debris flow channel.

Hazard ID #:	DF22
Hazard Type:	debris_flow
HIN:	147
Rating:	A
IRP 2006 Location:	1984
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elev. (ft):	2000-3000
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	1983+30
IRP 2006 North Margin:	1985+70
Photo #:	5047, 5164, 5914



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DF22. View southwest (downslope and down alignment) at debris flow fan and avalanche path ELC016. Photo taken 50 ft right of IRP 2006 1984+00.



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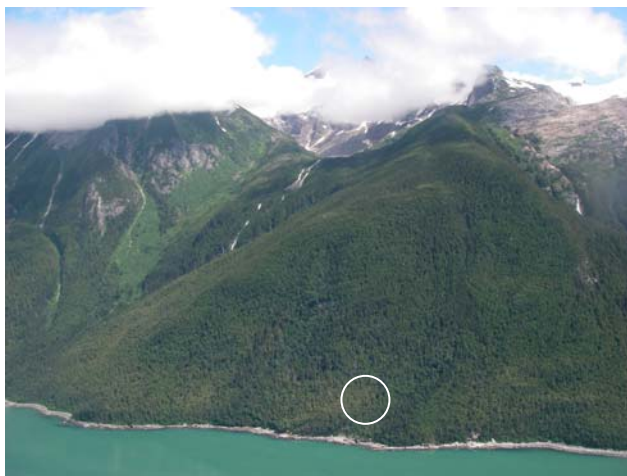
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G-77



RF16. View east/upslope at rockfall hazard.



RF16. View east/upslope at rockfall area.

Hazard ID #:	RF16
Hazard Type:	rockfall
HIN:	129
Rating:	B
IRP 2006 Location:	2015
Frequency (yrs):	unknown (5-25?)
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	3-4
Source Elev. (ft):	100-500
Centerline Slope:	deciduous_trees
Alignment Location:	below_deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2015+00
IRP 2006 North Margin:	2017+40
Photo #:	5052, 5053, 6240



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RF16. View north/up alignment across low frequency rockfall area 240 ft east of IRP 2006 2016+20.



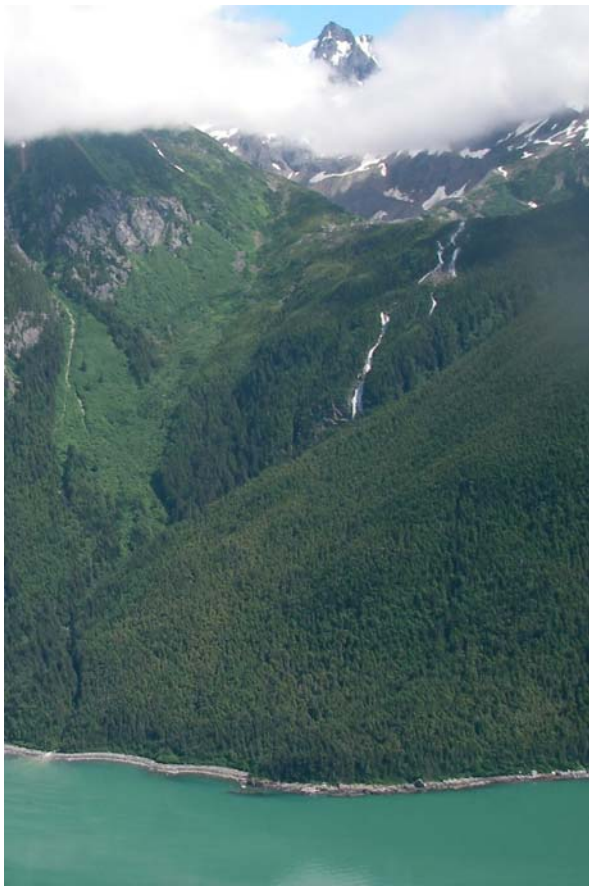
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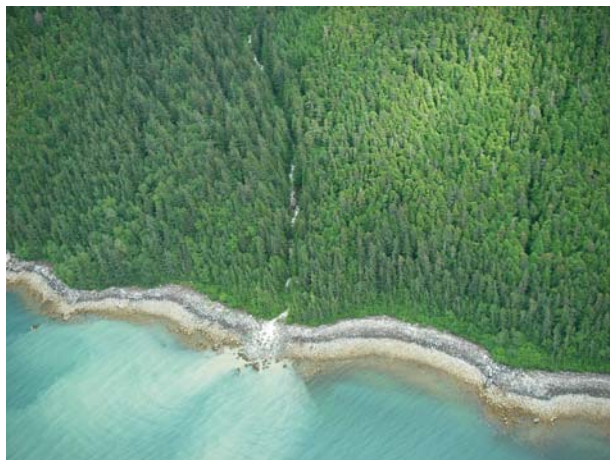
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DF23. View east/upslope at debris flow channel and avalanche path ELC017.



DF23. View east/upslope at debris flow channel and avalanche path ELC017.

Hazard ID #:	DF23
Hazard Type:	debris_flow
HIN:	117
Rating:	A
IRP 2006 Location:	2038
Frequency (yrs):	5-25
Predictability:	moderate
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elev. (ft):	3000+
Centerline Slope:	multi_channel
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2041+20
IRP 2006 North Margin:	2042+70
Photo #:	5057, 5166



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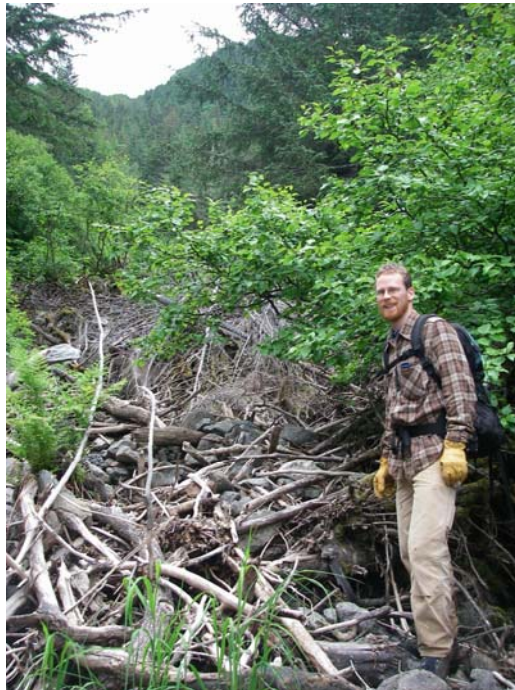
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G-80



DF23. View southwest (downslope and down alignment) into multi-channel debris flow at centerline. Secondary channel is seen to right of person. Person is located at centerline at IRP 2006 2042+00.



DF23. View east/upslope at debris flow channel and avalanche path ELC017. Photo taken 1,200 ft right of IRP 2006 2042+00.



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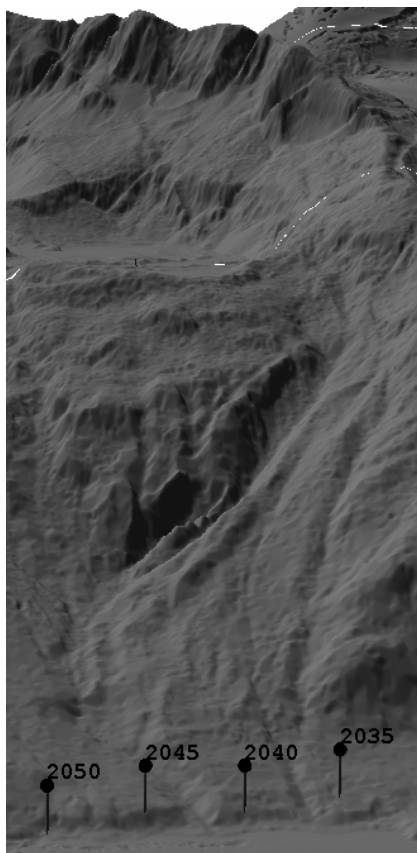
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G-81



SR01. LIDAR image of soil raveling area.

Hazard ID #:	SR01
Hazard Type:	soil_raveling
HIN:	171
Rating:	B
IRP 2006 Location:	2042
Frequency (yrs):	0-1
Predictability:	high
Material Volume (CY):	<10
Clast Size (ft):	1-2
Source Elev. (ft):	<100
Centerline Slope:	open_soil_slope
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	500+
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2043+40
IRP 2006 North Margin:	2050+10
Photo #:	5090, 5166, 6244



SR01. View east/upslope at soil raveling area.



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G-82



SR01. View northwest (up alignment and downslope) across soil raveling slope with 1-3 ft diameter boulders being deposited 15 ft left of IRP 2006 2047+00.



SR01. View east/upslope at soil raveling with 0-3 ft diameter boulders deposited 15 ft left of IRP 2006 alignment.



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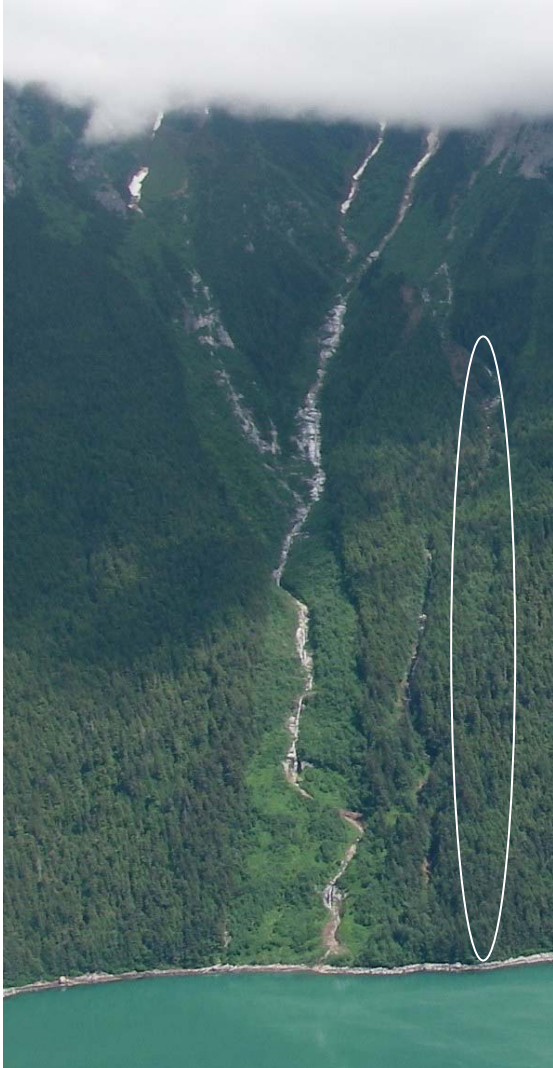
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G-83



DF24. View east/upslope at debris flow channel and avalanche path ELC018 (circled, right) and avalanche path ELC019 (with major stream, center).

Hazard ID #:	DF24
Hazard Type:	debris_flow
HIN:	207
Rating:	B
IRP 2006 Location:	2054
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elev. (ft):	3000+
Centerline Slope:	multi_channel
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2054+40
IRP 2006 North Margin:	2056+50
Photo #:	2054, 2239, 3462, 3463, 5093, 6195



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GEOLOGIC HAZARD SUMMARY
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G-84



DF24. View east/upslope at debris flow channel and avalanche path ELC018 (circled, right) and avalanche path ELC019 (with major stream, center).



DF24. View south/ down alignment across debris flow fan terminus at IRP 2006 2055+00.



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DF24. View north/up alignment across debris flow fan at centerline at IRP 2006 2055+00.

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DF25. View east/upslope at debris flow channel.



DF25. View east/upslope at debris flow channel.

Hazard ID #:	DF25
Hazard Type:	debris_flow
HIN:	129
Rating:	B
IRP 2006 Location:	2055
Frequency (yrs):	5-25
Predictability:	moderate
Material Volume (CY):	<10
Clast Size (ft):	0-1
Source Elev. (ft):	3000+
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	2056+50
IRP 2006 North Margin:	2059+00
Photo #:	3462, 3463, 5093, 6195



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G-87



DF26. View east/upslope at debris flow channel and avalanche path ELC019.



DF26. View east/upslope at debris flow channel and avalanche path ELC019 (center).

Hazard ID #:	DF26
Hazard Type:	debris_flow
HIN:	129
Rating:	B
IRP 2006 Location:	2056
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	0-1
Source Elev. (ft):	3000+
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2059+00
IRP 2006 North Margin:	2060+50
Photo #:	2241, 3470, 6195



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DF26. View east/upslope at debris flow channel and avalanche path ELC019. Photo taken 20 ft left of IRP 2006 2059+50.



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G-89



DF27. View east/upslope at debris flow channel and avalanche path ELC019-1.

Hazard ID #:	DF27
Hazard Type:	debris_flow
HIN:	129
Rating:	B
IRP 2006 Location:	2088
Frequency (yrs):	5-25
Predictability:	Low
Material Volume (CY):	<10
Clast Size (ft):	0-1
Source Elev. (ft):	2000-3000
Centerline Slope:	open_soil_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2088+00
IRP 2006 North Margin:	2089+00
Photo #:	3885, 5167, 5924, 6247



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DF27. View east/upslope at debris flow channel and avalanche path ELC019-1. Photo taken at centerline at IRP 2006 2088+50.



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G-91



DF28. View east/upslope at debris flow channel.



DF28. View northwest (up alignment and downslope) at IRP 2006 2103+00 at deposition fan of debris flow.

Hazard ID #:	DF28
Hazard Type:	debris_flow
HIN:	183
Rating:	A
IRP 2006 Location:	2104
Frequency (yrs):	0-1
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	3-4
Source Elev. (ft):	3000+
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	2102+30
IRP 2006 North Margin:	2103+70
Photo #:	3886, 5916



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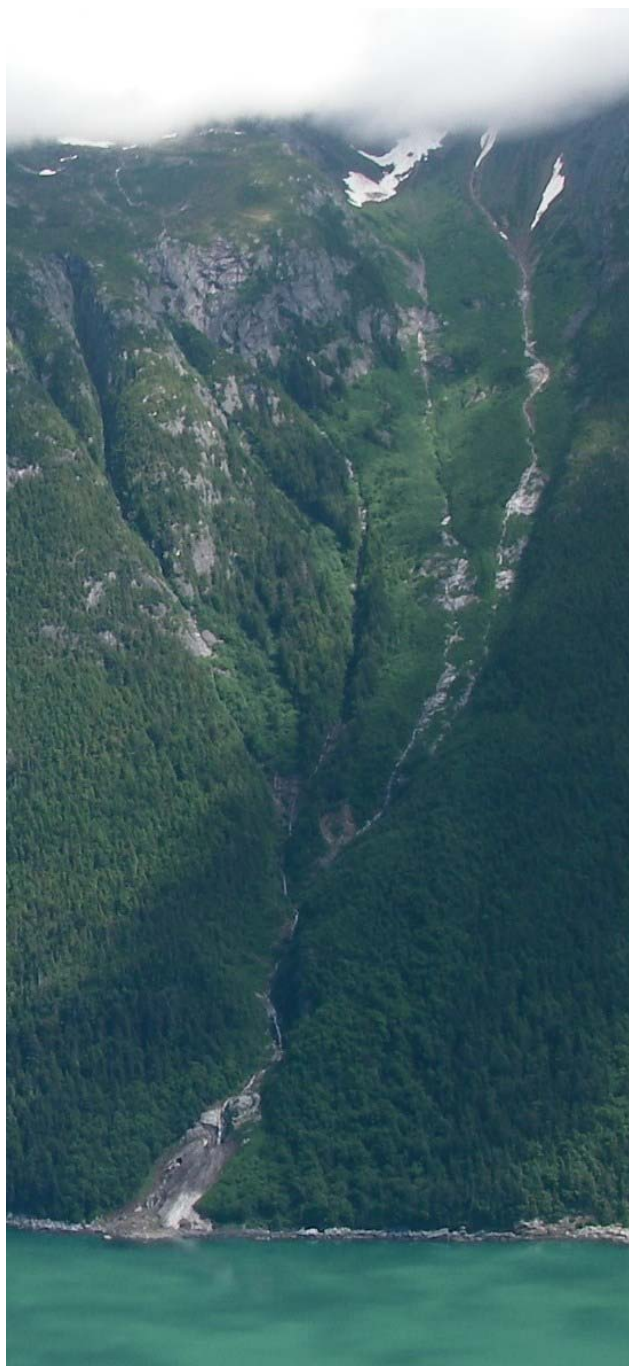
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Hazard ID #:	DF29
Hazard Type:	debris_flow
HIN:	153
Rating:	A
IRP 2006 Location:	2114
Frequency (yrs):	1-5
Predictability:	moderate
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elev. (ft):	3000+
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	2115+00
IRP 2006 North Margin:	2117+40
Photo #:	5125, 5926, 6248

DF29. View east/upslope at debris flow channel and avalanche path ELC020.



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DF29. View northeast (up alignment and upslope) at debris flow deposition zone and avalanche path ELC020.



DF29. View north/up alignment across debris flow fan 15 ft left of IRP 2006 2117+00 at base of avalanche path ELC020.



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G-94



DF30. View east/upslope at debris flow path.



DF30. Disturbed vegetation marks path of debris flow.

Hazard ID #:	DF30
Hazard Type:	debris_flow
HIN:	135
Rating:	B
IRP 2006 Location:	2123
Frequency (yrs):	5-25
Predictability:	low
Material Volume (CY):	10-100
Clast Size (ft):	0-1
Source Elev. (ft):	1000-2000
Centerline Slope:	single_channel
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2123+00
IRP 2006 North Margin:	2123+90
Photo #:	5168, 5927, 6250



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RF17. View east/upslope at rockfall hazard area.

Hazard ID #:	RF17
Hazard Type:	rockfall
HIN:	201
Rating:	A
IRP 2006 Location:	2129
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	3-4
Source Elev. (ft):	1000-2000
Centerline Slope:	open_soil_slope
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2129+00
IRP 2006 North Margin:	2130+00
Photo #:	5928, 6251



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RF17. View east/upslope at rockfall path.



RF17. View south/down alignment across rockfall with 3-5 ft diameter boulders at IRP 2006 2129+50.




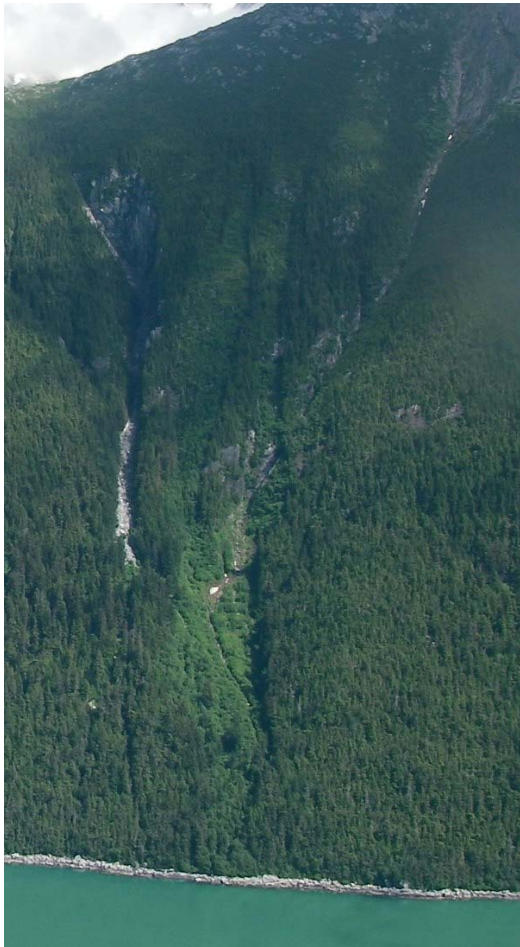
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SR02. View east/upslope at soil raveling area.

Hazard ID #:	SR02
Hazard Type:	soil_raveling
HIN:	171
Rating:	B
IRP 2006 Location:	2130
Frequency (yrs):	0-1
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	0-1
Source Elev. (ft):	<100
Centerline Slope:	single_channel
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	<50
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2129+40
IRP 2006 North Margin:	2129+80
Photo #:	3889, 5168

	CADD	ALF	TITLE GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION			
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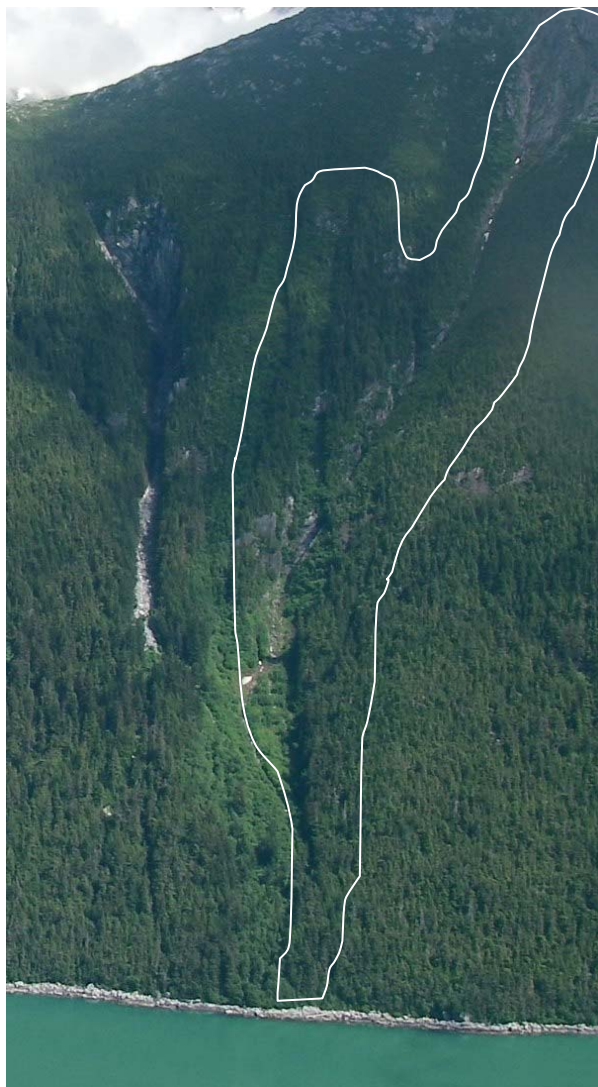
RF18. View east/upslope at rockfall area.



RF18. View east/upslope at rockfall area.

Hazard ID #:	RF18
Hazard Type:	rockfall
HIN:	105
Rating:	C
IRP 2006 Location:	2134
Frequency (yrs):	unknown (5-25?)
Predictability:	unpredictable
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elev. (ft):	<100
Centerline Slope:	open_bedrock_slope
Alignment Location:	starting_zone
Impact Alignment:	no
Alignment Exposure (ft):	<50
Vegetation:	-
Deciduous Trees:	no
IRP 2006 South Margin:	2134+00
IRP 2006 North Margin:	2134+50
Photo #:	1751, 3490, 5169, 5929

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DF31. View east/upslope at debris flow path and base avalanche path ELC021.

Hazard ID #:	DF31
Hazard Type:	debris_flow
HIN:	111
Rating:	A
IRP 2006 Location:	2142
Frequency (yrs):	5-25
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elev. (ft):	3000+
Centerline Slope:	multi_channel
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	2140+50
IRP 2006 North Margin:	2142+30
Photo #:	5168, 5169, 5929, 5930



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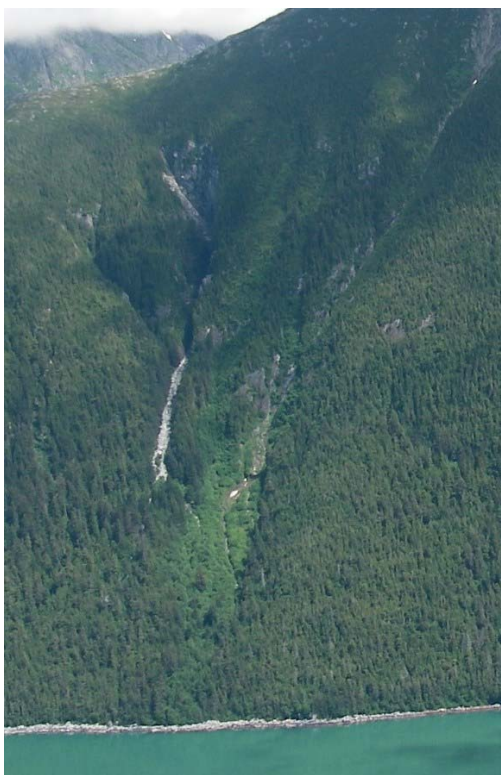
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G-100



RF19. View east/upslope at large rockfall area.



RF19. Fresh 6 ft diameter mega-boulder and related deforestation at centerline at IRP 2006 2144+00.

Hazard ID #:	RF19
Hazard Type:	rockfall
HIN:	273
Rating:	A
IRP 2006 Location:	2144
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elev. (ft):	3000+
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	500+
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2142+70
IRP 2006 North Margin:	2150+30
Photo #:	1357, 3491, 3493, 3495, 3498, 5130, 5168



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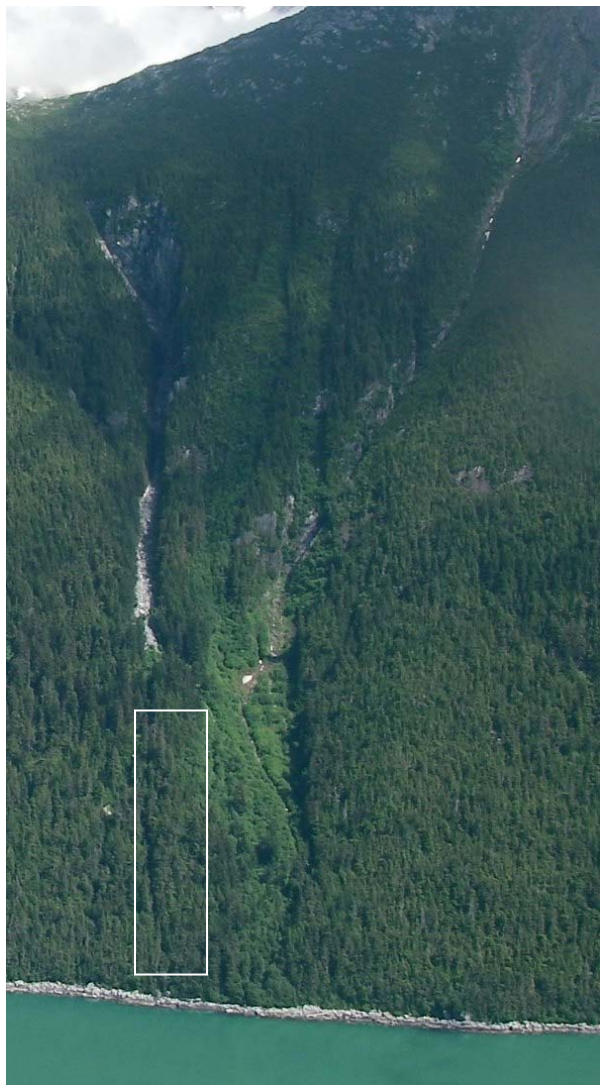


RF19. View west/downslope at rockfall debris deposited at centerline at IRP 2006 2144+00.



RF19. View west/downslope at rockfall path. Photo taken 400 ft right of IRP 2006 2145+00.

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RF20. View east/upslope at rockfall area and avalanche path ELC023.

Hazard ID #:	RF20
Hazard Type:	rockfall
HIN:	165
Rating:	A
IRP 2006 Location:	2145
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elev. (ft):	500-1000
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2144+60
IRP 2006 North Margin:	2146+80
Photo #:	1357, 3491, 3493, 3495, 3498, 5130, 5131, 5168



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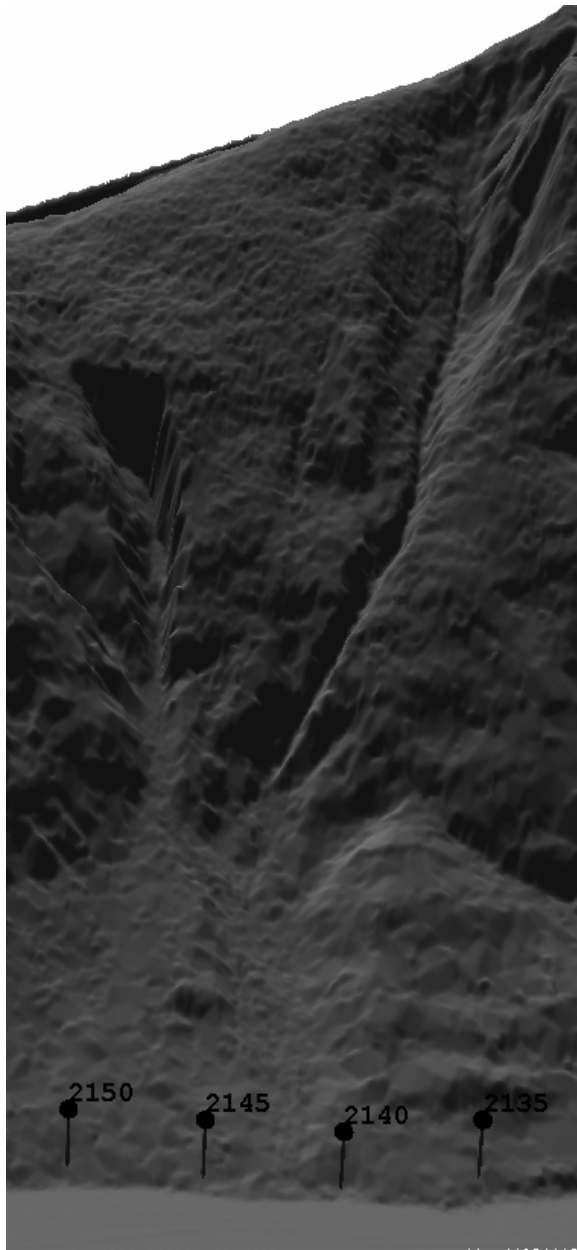
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RF20. Bare earth LIDAR image view east/upslope at rockfall hazard area.



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G-104



RF21. View north/up alignment at rockfall hazard.

Hazard ID #:	RF21
Hazard Type:	rockfall
HIN:	147
Rating:	C
IRP 2006 Location:	2154
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	2-3
Source Elev. (ft):	500-1000
Centerline Slope:	-
Alignment Location:	below_deposition _zone
Impact Alignment:	no
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2154+00
IRP 2006 North Margin:	2155+00
Photo #:	6014



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LS01. View east/upslope at landslide area.

Hazard ID #:	LS01
Hazard Type:	landslide
HIN:	183
Rating:	C
IRP 2006 Location:	2205
Frequency (yrs):	unknown (>25?)
Predictability:	unpredictable
Material Volume (CY):	10-100
Clast Size (ft):	-
Source Elev. (ft):	1000-2000
Centerline Slope:	-
Alignment Location:	below_deposition _zone
Impact Alignment:	no
Alignment Exposure (ft):	<50
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	2204+00
IRP 2006 North Margin:	2208+00
Photo #:	5171



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DF32. View east/upslope at outlet of debris flow.

Hazard ID #:	DF32
Hazard Type:	debris_flow
HIN:	51
Rating:	B
IRP 2006 Location:	2207
Frequency (yrs):	5-25
Predictability:	high
Material Volume (CY):	<10
Clast Size (ft):	0-1
Source Elev. (ft):	500-1000
Centerline Slope:	single_channel
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2206+60
IRP 2006 North Margin:	2207+20
Photo #:	6018



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Hazard ID #:	LS02
Hazard Type:	translational_slide
HIN:	135
Rating:	C
IRP 2006 Location:	2220
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	10-100
Clast Size (ft):	0-1
Source Elev. (ft):	100-500
Centerline Slope:	-
Alignment Location:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	2219+60
IRP 2006 North Margin:	2221+00
Photo #:	5000, 5937



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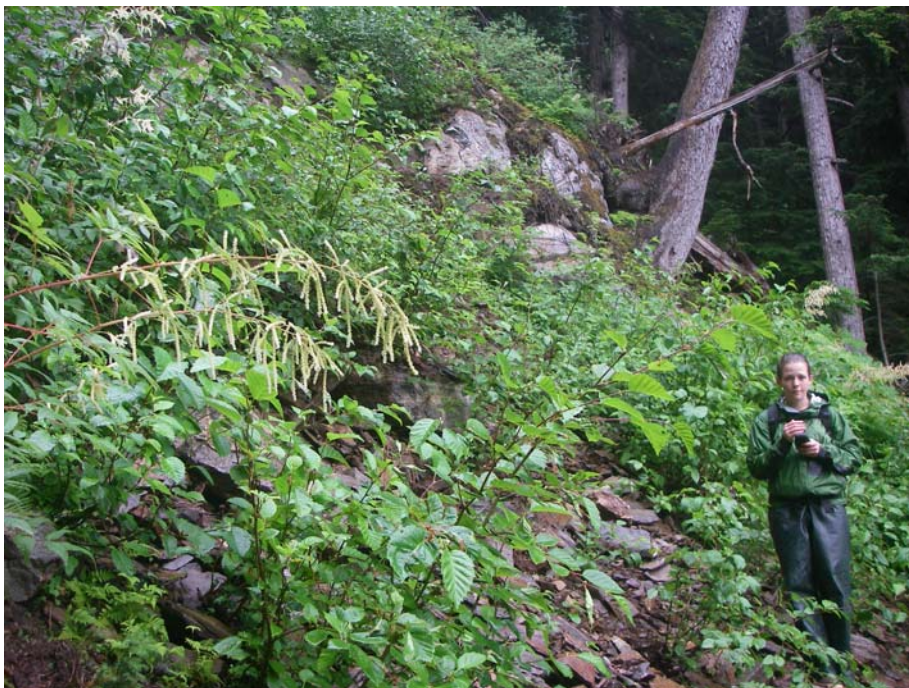
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G-108



LS02. View east/upslope at landslide area.



LS02. View south/down alignment at landslide and exposed bedrock. Photo taken 47 ft right of IRP 2006 2221+00.



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DF33. View east/upslope at debris flow channel.

Hazard ID #:	DF33
Hazard Type:	debris_flow
HIN:	183
Rating:	B
IRP 2006 Location:	2250
Frequency (yrs):	unknown (5-25?)
Predictability:	unpredictable
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elev. (ft):	3000+
Centerline Slope:	single_channel
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	<50
Vegetation:	denuded
Deciduous Trees:	no
IRP 2006 South Margin:	2252+50
IRP 2006 North Margin:	2252+80
Photo #:	6023



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G-110



RF22. View east/upslope at fresh rockfall. Photo taken 150 left of IRP 2006 2253+50.



RF22. View east/upslope at rockfall path.

Hazard ID #:	RF22
Hazard Type:	rockfall
HIN:	147
Rating:	B
IRP 2006 Location:	2254
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	1-2
Source Elev. (ft):	500-1000
Centerline Slope:	single_channel
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	2253+30
IRP 2006 North Margin:	2253+80
Photo #:	5941, 6024



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G-111



RF23. View east/upslope at rockfall area.



RF23. View south/down alignment at fresh rockfall hazard. Photo taken 100 ft right of IRP 2006 2256+00.

Hazard ID #:	RF23
Hazard Type:	rockfall
HIN:	147
Rating:	B
IRP 2006 Location:	2256
Frequency (yrs):	unknown (1-5?)
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	0-1
Source Elev. (ft):	100-500
Centerline Slope:	other
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	2254+90
IRP 2006 North Margin:	2258+10
Photo #:	3505



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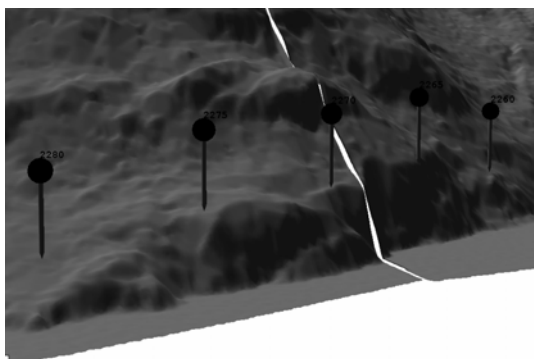
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G-112



RF24. View east/upslope at rockfall hazard.



RF24. LIDAR bare earth image of rockfall hazard.

Hazard ID #:	RF24
Hazard Type:	rockfall
HIN:	147
Rating:	C
IRP 2006 Location:	2260
Frequency (yrs):	unknown (1-5?)
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elev. (ft):	100-500
Centerline Slope:	-
Alignment Location:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2258+90
IRP 2006 North Margin:	2261+00
Photo #:	3507



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G-113



RF24. View east of rockfall hazard with fresh scarring.
Photo taken 215 ft right of IRP 2006 2258+00.



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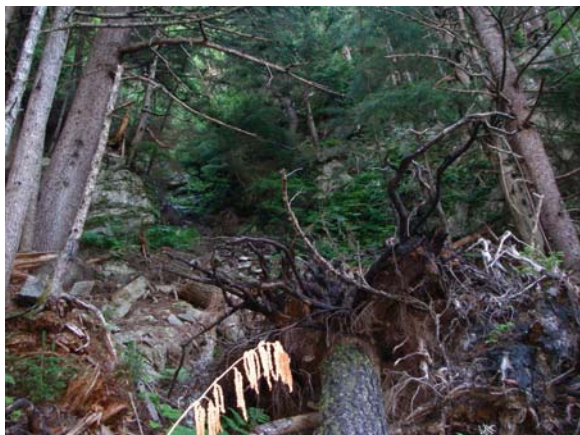
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G-114



RS02. View east/upslope at rockfall hazard and rockslide.



RS02. View east/upslope at rockslide path. Photo taken 270 ft right of IRP 2006 2261+00.

Hazard ID #:	RS02
Hazard Type:	rock_slide
HIN:	81
Rating:	A
IRP 2006 Location:	2261
Frequency (yrs):	1-5
Predictability:	moderate
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elev. (ft):	500-1000
Centerline Slope:	single_channel
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	2261+10
IRP 2006 North Margin:	2261+80
Photo #:	3508, 3510, 3511



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G-115



SR03. View north/up alignment at soil raveling. Photo taken at centerline at IRP 2006 2267+00.



SR03. View east/upslope at soil raveling area.

Hazard ID #:	SR03
Hazard Type:	soil_raveling
HIN:	147
Rating:	B
IRP 2006 Location:	2265
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	2-3
Source Elev. (ft):	100-500
Centerline Slope:	open_bedrock_slope
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2263+50
IRP 2006 North Margin:	2267+40
Photo #:	5579, 5580, 5581



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G-116



DF 34. View east/upslope at debris flow channel and avalanche path ELC025.

Hazard ID #:	DF34
Hazard Type:	debris_flow
HIN:	147
Rating:	B
IRP 2006 Location:	2281
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elev. (ft):	3000+
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	2283+70
IRP 2006 North Margin:	2287+10
Photo #:	3527, 3528



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G-117



DF34. View north/up alignment at debris flow channel/avalanche path ELC025.
Photo taken 580 ft right of IRP 2006 2284+00.



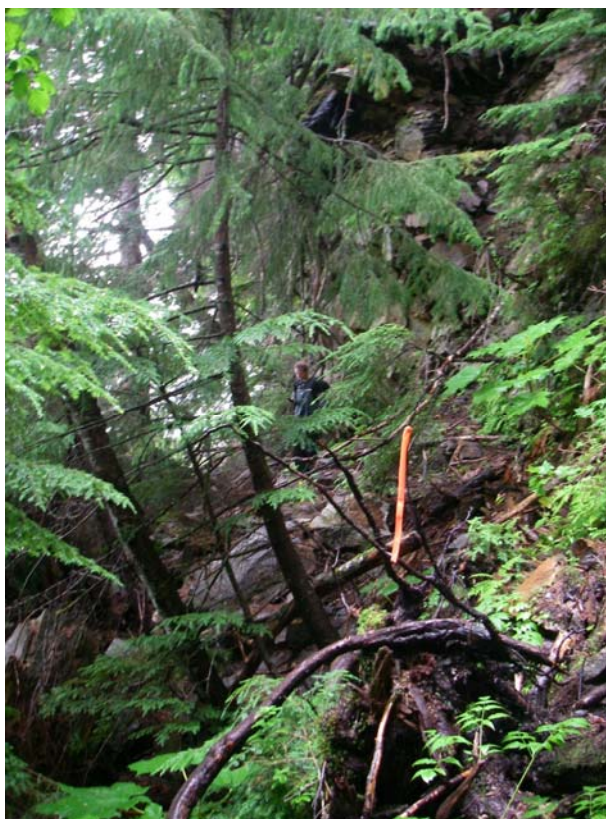
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G-118



RF25. View north/up alignment at rockfall hazard impacting the alignment. Orange flagging represents alignment at IRP 2006 2291+50.

Hazard ID #:	RF25
Hazard Type:	rockfall
HIN:	123
Rating:	B
IRP 2006 Location:	2291
Frequency (yrs):	unknown (1-5?)
Predictability:	unpredictable
Material Volume (CY):	10-100
Clast Size (ft):	2-3
Source Elev. (ft):	<100
Centerline Slope:	open_bedrock_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	<50
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	2290+60
IRP 2006 North Margin:	2291+00
Photo #:	3531



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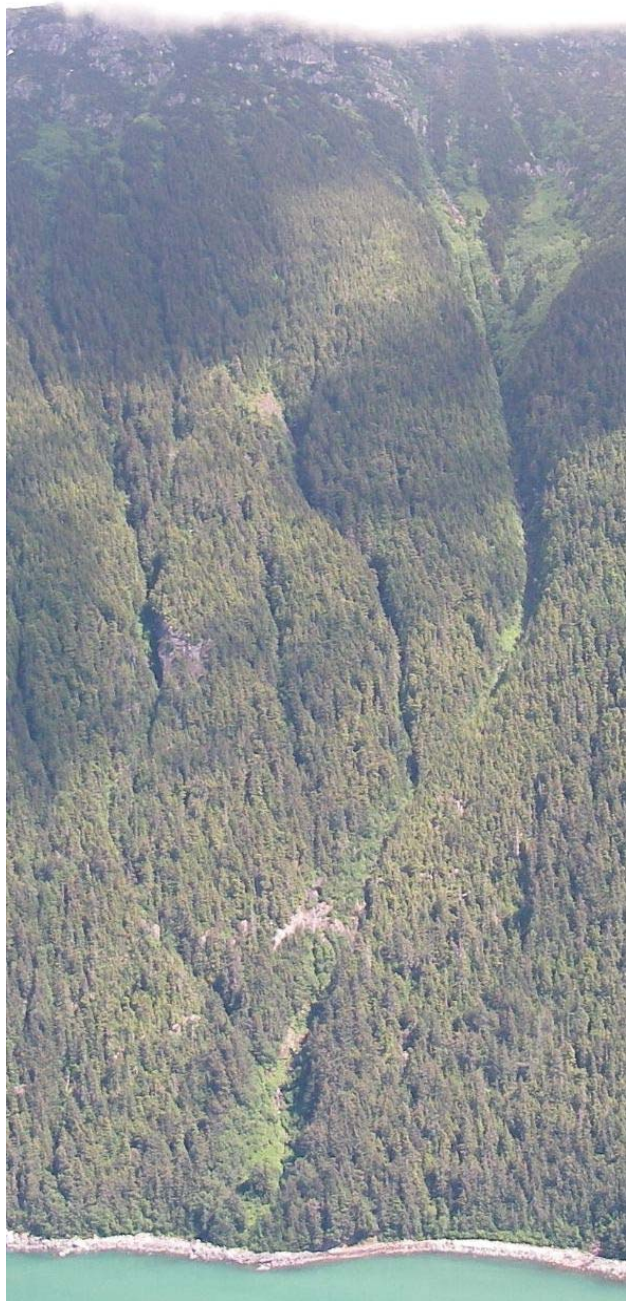
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G-119



DF35. View east/upslope at debris flow channel and avalanche path ELC026.

Hazard ID #:	DF35
Hazard Type:	debris_flow
HIN:	207
Rating:	B
IRP 2006 Location:	2296
Frequency (yrs):	unknown (1-5?)
Predictability:	unpredictable
Material Volume (CY):	10-100
Clast Size (ft):	3-4
Source Elev. (ft):	3000+
Centerline Slope:	fan
Alignment Location:	deposition _zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2293+80
IRP 2006 North Margin:	2294+90
Photo #:	3535



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G-120



DF35. View east/upslope of debris flow channel and avalanche path
ELC026. Photo taken 320 ft right of IRP 2006 2295+00.



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G-121



LS03. View north/up alignment at landslide. Photo taken 200 ft right of IRP 2006 2299+50.


Hazard ID #:	LS03
Hazard Type:	translational_slide
HIN:	111
Rating:	C
IRP 2006 Location:	2300
Frequency (yrs):	25+
Predictability:	unpredictable
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elev. (ft):	100-500
Centerline Slope:	-
Alignment Location:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2299+10
IRP 2006 North Margin:	2299+60
Photo #:	5269, 5946

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RF26. View north/up alignment at rockfall hazard. Photo taken 100 ft right of IRP 2006 2301+00.

Hazard ID #:	RF26
Hazard Type:	rockfall
HIN:	117
Rating:	B
IRP 2006 Location:	2301
Frequency (yrs):	unknown (5-25?)
Predictability:	unpredictable
Material Volume (CY):	10-100
Clast Size (ft):	4+
Source Elev. (ft):	100-500
Centerline Slope:	other
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	undisturbed
Deciduous Trees:	no
IRP 2006 South Margin:	2300+20
IRP 2006 North Margin:	2301+10
Photo #:	3559, 3560, 5946

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RF27. View south/down alignment at rockfall hazard. Photo taken 300 ft right of IRP 2006 2308+00

Hazard ID #:	RF27
Hazard Type:	rockfall
HIN:	165
Rating:	B
IRP 2006 Location:	2308
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	2-3
Source Elev. (ft):	500-1000
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2303+50
IRP 2006 North Margin:	2308+40
Photo #:	3561



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G-124



DF36. View east/upslope at debris flow channel.



DF36. View west/downslope at debris flow channel scoured to gneiss bedrock. Photo taken 320 ft right of IRP 2006 2311+50.

Hazard ID #:	DF36
Hazard Type:	debris_flow
HIN:	129
Rating:	B
IRP 2006 Location:	2310
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	0-1
Source Elev. (ft):	1000-2000
Centerline Slope:	fan
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	2311+10
IRP 2006 North Margin:	2311+80
Photo #:	3562



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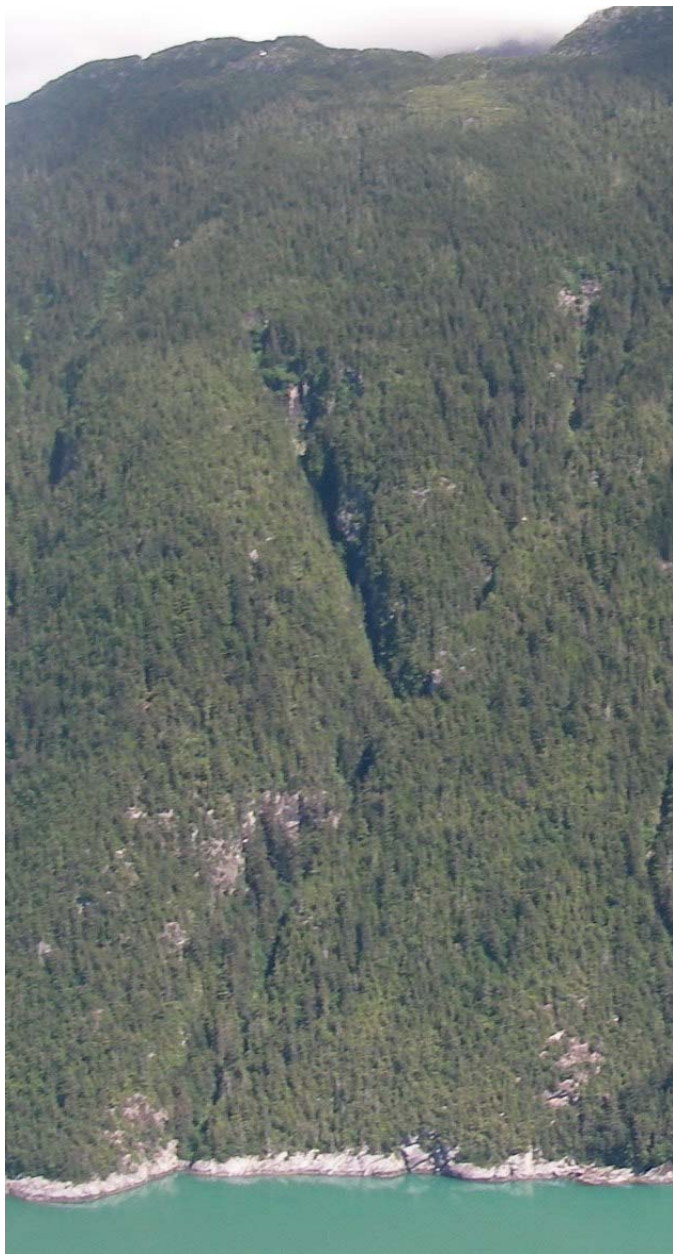
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G-125



DF37. View east/upslope at debris flow channel and avalanche path ELC028.

Hazard ID #:	DF37
Hazard Type:	debris_flow
HIN:	129
Rating:	B
IRP 2006 Location:	2321
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elev. (ft):	1000-2000
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	2321+20
IRP 2006 North Margin:	2322+10
Photo #:	3564, 3565, 3566



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G-126



DF37. View east/upslope at debris flow channel with extreme cliffs to south (down alignment). Photo taken 320 ft right of IRP 2006 2320+50.



DF37. View east/downslope at boulders deposited by debris flow. Photo taken 320 ft right of IRP 2006 2320+00.

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RF28. View east/downslope at rockfall hazard. Photo taken 130 ft right of IRP 2006 2322+00.



RF28. View east/downslope at rockfall hazard area.

Hazard ID #:	RF28
Hazard Type:	rockfall
HIN:	183
Rating:	A
IRP 2006 Location:	2322
Frequency (yrs):	0-1
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	1-2
Source Elev. (ft):	100-500
Centerline Slope:	single_channel
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2322+10
IRP 2006 North Margin:	2322+70
Photo #:	3891, 5948, 6254



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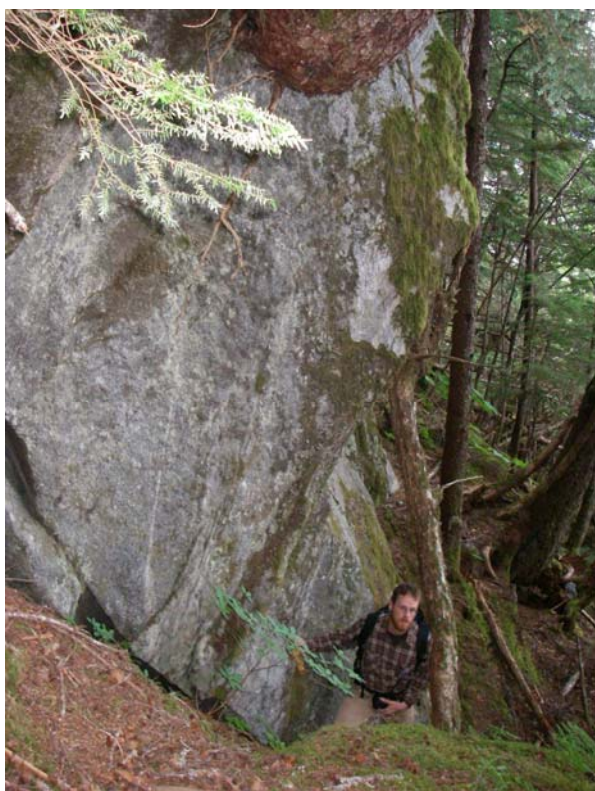
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G-128



RF29. View northeast (up alignment and upslope) at rockfall area across IRP 2006 alignment.



RF20. View west/downslope at rockfall hazard. Photo taken 130 ft right of IRP 2006 2329+00.

Hazard ID #:	RF29
Hazard Type:	rockfall
HIN:	105
Rating:	B
IRP 2006 Location:	2328
Frequency (yrs):	25+
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	3-4
Source Elev. (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	2328+10
IRP 2006 North Margin:	2329+10
Photo #:	6140



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G-129



RF30. View east/upslope at rockfall hazard.



RF30. View west/downslope at rockfall hazard. Photo taken 230 ft right of IRP 2006 2331+50.

Hazard ID #:	RF30
Hazard Type:	rockfall
HIN:	135
Rating:	B
IRP 2006 Location:	2332
Frequency (yrs):	5-25
Predictability:	unpredictable
Material Volume (CY):	10-100
Clast Size (ft):	4+
Source Elev. (ft):	500-1000
Centerline Slope:	open_soil_slope
Alignment Location:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	2331+40
IRP 2006 North Margin:	2332+80
Photo #:	6142, 6143



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G-130



RF31. View east/upslope at rockfall hazard and avalanche path ELC028-2.

Hazard ID #:	RF31
Hazard Type:	rockfall
HIN:	129
Rating:	A
IRP 2006 Location:	2335
Frequency (yrs):	5-25
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elev. (ft):	500-1000
Centerline Slope:	single_channel
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	2334+70
IRP 2006 North Margin:	2335+60
Photo #:	6144, 6145



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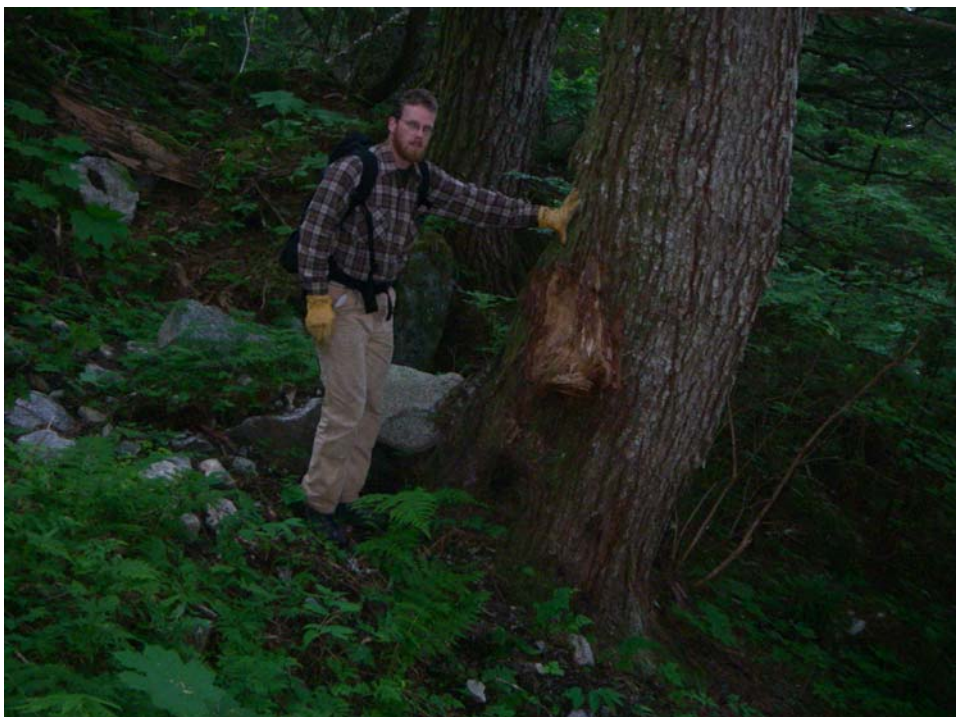
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G-131



RF31. View south/down alignment at rockfall with freshly gouged trees. Photo taken 350 ft right of IRP 2006 2335+00.



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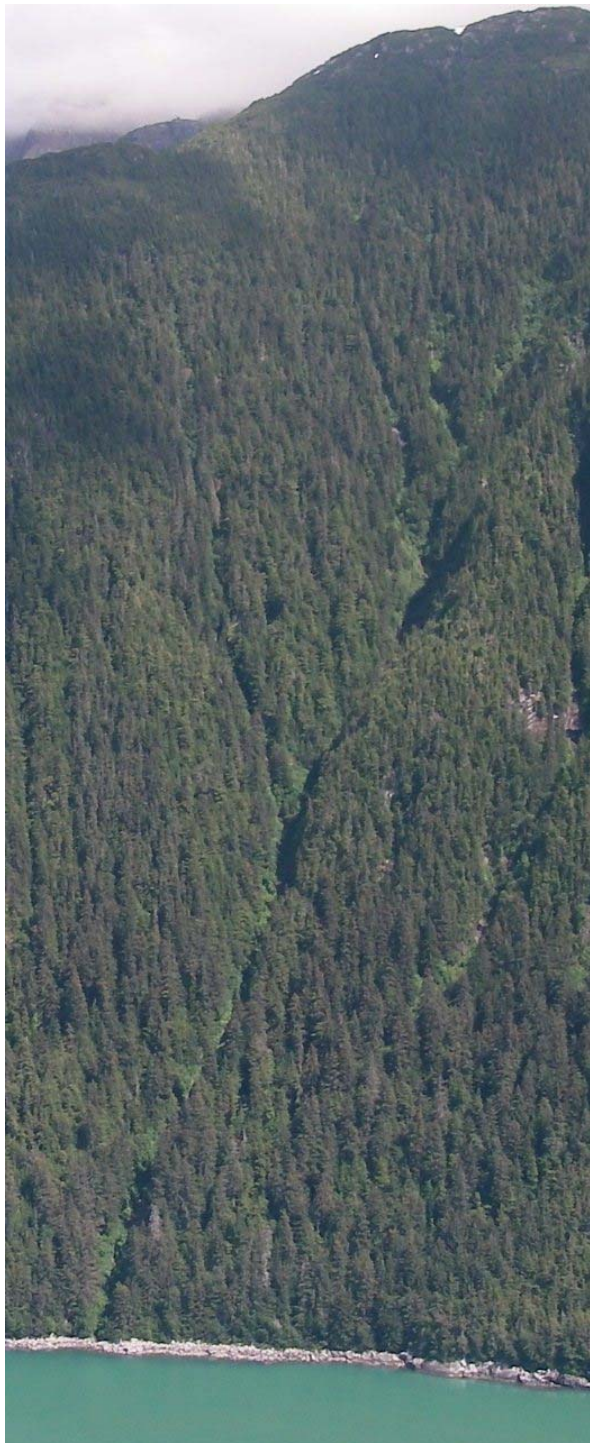
TITLE

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ARRANGED BY IRP 2006 STATIONING
 LYNN CANAL HIGHWAY PHASE I
 ZONE 4 GEOTECHNICAL INVESTIGATION

FILE No.	GEO_HAZ_SUMM.PPT
PROJECT No.	063-5782

ADOT / LYNN CANAL HWY ZONE 4 / AK

G-132



DF38. View east/upslope at debris flow channel and avalanche path ELC029.

Hazard ID #:	DF38
Hazard Type:	debris_flow
HIN:	129
Rating:	A
IRP 2006 Location:	2338
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	0-1
Source Elev. (ft):	2000-3000
Centerline Slope:	single_channel
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	no
IRP 2006 South Margin:	2338+00
IRP 2006 North Margin:	2338+90
Photo #:	6146



CADD	ALF
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CHECK	RGD
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-133



DF38. View west/downslope at debris flow channel. Photo taken 490 ft right of IRP 2006 2338+50.



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TITLE

**GEOLOGIC HAZARD SUMMARY
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ZONE 4 GEOTECHNICAL INVESTIGATION**

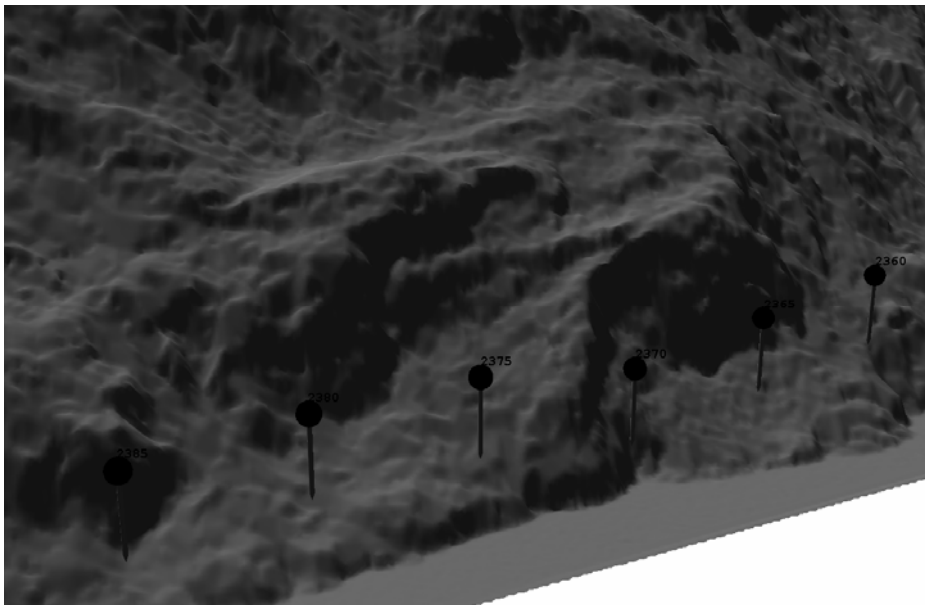
FILE No.	GEO_HAZ_SUMM.PPT
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ADOT / LYNN CANAL HWY ZONE 4 / AK


G-134

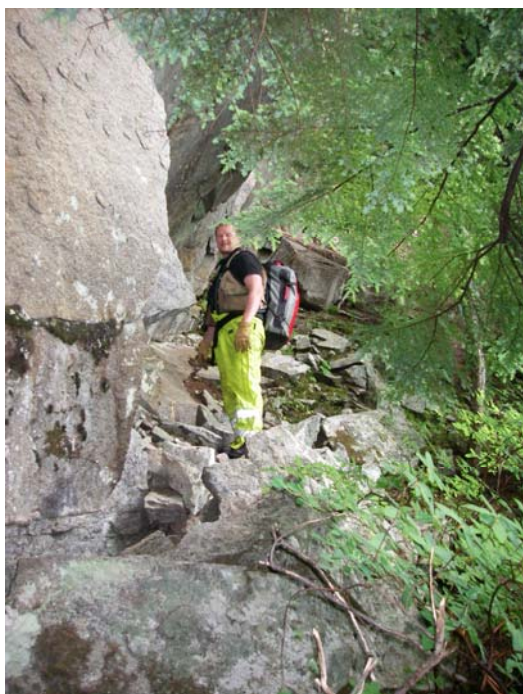


RF32 & RF33. View east/upslope at rockfall hazard from severe cliffs. This photo presents the area for RF32 and RF33.



RF32 & RF33. LIDAR image showing topography and cliffs producing rockfall hazards.

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION			
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RF32. View south/down alignment at rockfall hazard. Photo taken 100 ft right of IRP 2006 2364+00.



RF32. View north/up alignment at scar on tree from rockfall/boulder striking tree. Photo taken at centerline at IRP 2006 2364+50.

Hazard ID #:	RF32
Hazard Type:	rockfall
HIN:	201
Rating:	B
IRP 2006 Location:	2370
Frequency (yrs):	0-1
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	1-2
Source Elevation (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2361+10
IRP 2006 North Margin:	2364+20
Photo #:	3724, 3725



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GEOLOGIC HAZARD SUMMARY
ARRANGED BY IRP 2006 STATIONING
LYNN CANAL HIGHWAY PHASE I
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-136



RF33. View south/down alignment at tabular blocks creating rockfall hazard. Photo taken 90 ft right of IRP 2006 2367+00.

Hazard ID #:	RF33
Hazard Type:	rockfall
HIN:	255
Rating:	B
IRP 2006 Location:	2365
Frequency (yrs):	0-1
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	1-2
Source Elevation (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	500+
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2364+20
IRP 2006 North Margin:	2370+50
Photo #:	3724, 3725



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GEOLOGIC HAZARD SUMMARY
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G-137



RF33. View east/upslope at freshly scarred cliffs.
Photo taken 135 ft right of IRP 2006 2367+50.



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TITLE

GEOLOGIC HAZARD SUMMARY
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-138



RF33. View north/up alignment at a 300-500 lb boulder/rockfall (fresh) from cliffs above, stopped by a tree. Photo taken at centerline at IRP 2006 2367+00.



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ARRANGED BY IRP 2006 STATIONING
 LYNN CANAL HIGHWAY PHASE I
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-139



HR01. View north/up alignment at hazard rock perched 50 ft left of IRP 2006 2374+90.

Hazard ID #:	HR01
Hazard Type:	hazard_rocks
HIN:	99
Rating:	C
IRP 2006 Location:	2374
Frequency (yrs):	unknown (>25?)
Predictability:	unpredictable
Material Volume (CY):	10-100
Clast Size (ft):	4+
Source Elev. (ft):	<100
Centerline Slope:	open_soil_slope
Alignment Location:	below_deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	<50
Vegetation:	undisturbed
Deciduous Trees:	no
IRP 2006 South Margin:	2374+90
IRP 2006 North Margin:	-
Photo #:	3722



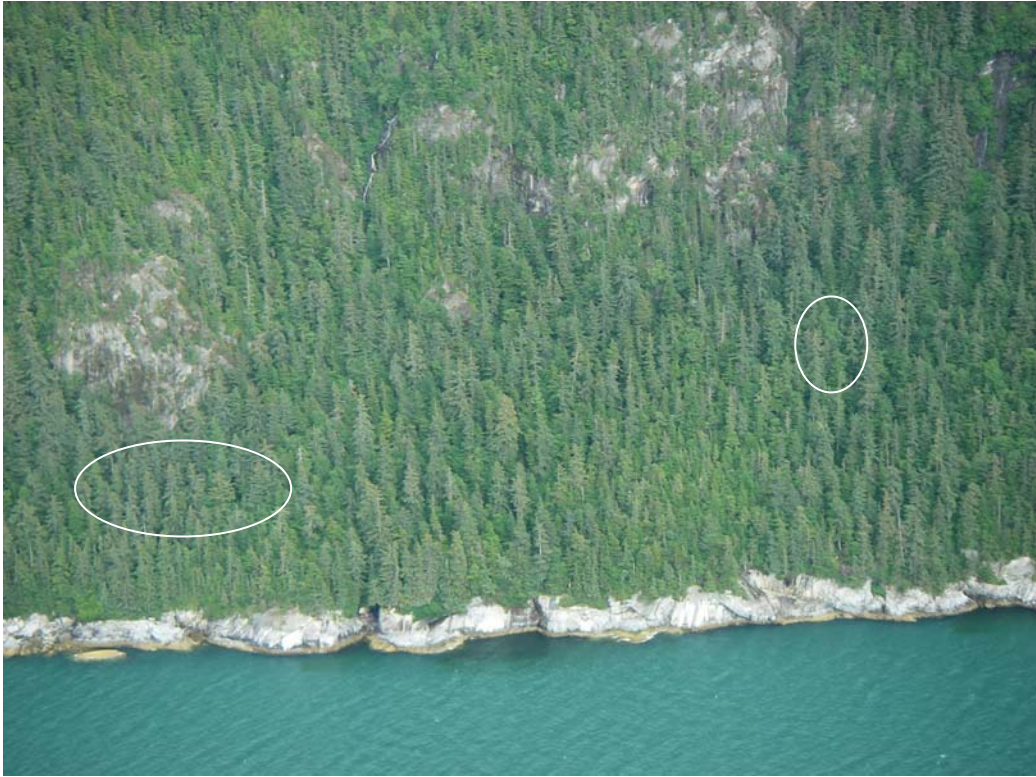
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GEOLOGIC HAZARD SUMMARY
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G-140



HR01 & HR02. View east/upslope at hazard rocks HR01 (right) and HR02 (left).



CADD	ALF
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CHECK	RGD
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REV	0

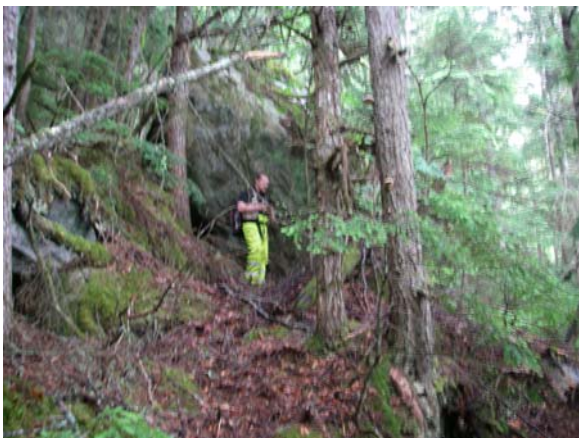
FILE No.	GEO_HAZ_SUMM.PPT
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-141



HR02. View south/down alignment at hazard rock 75 ft right of IRP 2006 2379+40.

Hazard ID #:	HR02
Hazard Type:	hazard_rocks
HIN:	99
Rating:	C
IRP 2006 Location:	2380
Frequency (yrs):	unknown (>25?)
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elev. (ft):	<100
Centerline Slope:	open_soil_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	2379+40
IRP 2006 North Margin:	2380+90
Photo #:	3719



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GEOLOGIC HAZARD SUMMARY
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G-142




RF34 & RF35. View east/upslope at rockfall hazard from severe cliffs: RF34 (right) and RF 35 (left).

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	DATE	11/27/06			
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RF34. View west/downslope at rockfall hazard. Fresh scarring of spruce tree next to backpack. Photo taken 75 ft right of IRP 2006 2383+00.

Hazard ID #:	RF34
Hazard Type:	rockfall
HIN:	177
Rating:	B
IRP 2006 Location:	2383
Frequency (yrs):	25+
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elev. (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	500+
Vegetation:	undisturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2382+50
IRP 2006 North Margin:	2388+50
Photo #:	3712, 3715

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RF35. View west/upslope at 15 foot overhanging cliffs with fresh rockfall. Photo taken 75 ft right of IRP 2006 2388+00.

Hazard ID #:	RF35
Hazard Type:	rockfall
HIN:	183
Rating:	B
IRP 2006 Location:	2388
Frequency (yrs):	0-1
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	0-1
Source Elev. (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2388+00
IRP 2006 North Margin:	2388+80
Photo #:	3706



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GEOLOGIC HAZARD SUMMARY
ARRANGED BY IRP 2006 STATIONING
LYNN CANAL HIGHWAY PHASE I
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-145



SR04. View east/upslope at soil raveling hazard.



SR04. View south/down alignment at soil raveling in glacial outwash. Photo taken 30 ft left of IRP 2006 2424+00.

Hazard ID #:	SR04
Hazard Type:	soil_raveling
HIN:	105
Rating:	B
IRP 2006 Location:	2420
Frequency (yrs):	5-25
Predictability:	moderate
Material Volume (CY):	<10
Clast Size (ft):	3-4
Source Elev. (ft):	<100
Centerline Slope:	open_soil_slope
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	500+
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	2420+70
IRP 2006 North Margin:	2426+80
Photo #:	3595-3598, 5957, 6061



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ARRANGED BY IRP 2006 STATIONING
LYNN CANAL HIGHWAY PHASE I
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-146



SR04. View east/upslope at slope releasing 1-3 ft diameter rocks. IRP 2006 2426+20 is located where person is standing.

	CADD	ALF	<div>GEOLOGIC HAZARD SUMMARY</div> <div>ARRANGED BY IRP 2006 STATIONING</div> <div>LYNN CANAL HIGHWAY PHASE I</div> <div>ZONE 4 GEOTECHNICAL INVESTIGATION</div>			
	DATE	11/27/06				
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LS04. View east/upslope at recent landslide. Photo taken 70 ft right of IRP 2006 2427+00.



LS04. View west/downslope at slope failure in glacial outwash material. Photo taken 75 ft right of IRP 2006 2427+10.

Hazard ID #:	LS04
Hazard Type:	translational_slide
HIN:	33
Rating:	B
IRP 2006 Location:	2426
Frequency (yrs):	5-25
Predictability:	moderate
Material Volume (CY):	<10
Clast Size (ft):	3-4
Source Elev. (ft):	<100
Centerline Slope:	open_soil_slope
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	2426+80
IRP 2006 North Margin:	2427+40
Photo #:	3595, 3597, 3598, 6074



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GEOLOGIC HAZARD SUMMARY
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LYNN CANAL HIGHWAY PHASE I
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-148

Hazard ID #:	RF36
Hazard Type:	rockfall
HIN:	129
Rating:	B
IRP 2006 Location:	2454
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	3-4
Source Elev. (ft):	100-500
Centerline Slope:	-
Alignment Location:	below_deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	2454+50
IRP 2006 North Margin:	2455+00
Photo #:	3609, 5960



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 LYNN CANAL HIGHWAY PHASE I
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-149



RF36. View east/upslope at rockfall hazard.



RF36. View west/downslope at rockfall chute. Photo taken 90 ft right of IRP 2006 2454+60.



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G-150



LS05. View east/upslope at landslide.



LS05. View west/downslope at landslide. Photo taken 230 ft right of IRP 2006 2457+00.

Hazard ID #:	LS05
Hazard Type:	translational_slide
HIN:	129
Rating:	C
IRP 2006 Location:	2457
Frequency (yrs):	5-25
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	3-4
Source Elev. (ft):	100-500
Centerline Slope:	-
Alignment Location:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2456+00
IRP 2006 North Margin:	2458+00
Photo #:	3615, 5961, 6077



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G-151



DF40. View east/upslope at debris flow channel.



DF40. View west/upslope at debris flow channel. Photo taken 315 ft right of IRP 2006 2459+00.

Hazard ID #:	DF40
Hazard Type:	debris_flow
HIN:	135
Rating:	B
IRP 2006 Location:	2459
Frequency (yrs):	5-25
Predictability:	low
Material Volume (CY):	10-100
Clast Size (ft):	0-1
Source Elev. (ft):	2000-3000
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	no
IRP 2006 South Margin:	2459+00
IRP 2006 North Margin:	2459+90
Photo #:	3616, 5180, 5961



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G-152

Hazard ID #:	DF41
Hazard Type:	debris_flow
HIN:	129
Rating:	B
IRP 2006 Location:	2460
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	10-100
Clast Size (ft):	0-1
Source Elev. (ft):	3000+
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	2460+40
IRP 2006 North Margin:	2461+00
Photo #:	3616



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G-153



DF41. View east/upslope at debris flow channel.



DF41. View east/upslope at debris flow chute with active stream. Photo taken 130 ft right of IRP 2006 2461+00.



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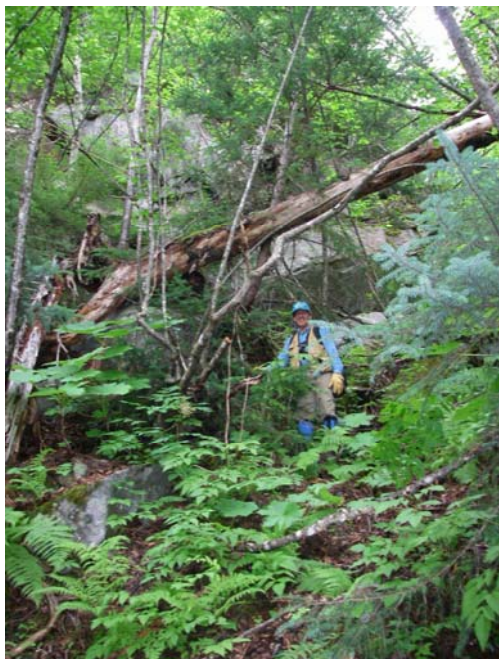
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REV	0

TITLE

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ARRANGED BY IRP 2006 STATIONING
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G-154



RF37. View east/upslope at rockfall area. Photo taken at centerline at IRP 2006 2468+80.

Hazard ID #:	RF37
Hazard Type:	rockfall
HIN:	69
Rating:	B
IRP 2006 Location:	2467
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elev. (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2466+10
IRP 2006 North Margin:	2470+00
Photo #:	3637, 5181, 5962



CADD	ALF
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**GEOLOGIC HAZARD SUMMARY
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G-155



RF37. View east/upslope at rockfall hazard.



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G-156



RF38. View south/down alignment at typical talus field within rockfall hazard. Photo taken 10 ft left of IRP 2006 2473+50.

Hazard ID #:	RF38
Hazard Type:	rockfall
HIN:	33
Rating:	B
IRP 2006 Location:	2473
Frequency (yrs):	5-25
Predictability:	high
Material Volume (CY):	<10
Clast Size (ft):	1-2
Source Elev. (ft):	100-500
Centerline Slope:	single_channel
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2473+00
IRP 2006 North Margin:	2474+00
Photo #:	6092



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G-157



RF39. View south/down alignment at rockfall hazard. Photo taken at centerline at IRP 2006 2481+00.



RF39. View east/upslope at rockfall. Photo taken at centerline at IRP 2006 2481+00.

Hazard ID #:	RF39
Hazard Type:	rockfall
HIN:	129
Rating:	B
IRP 2006 Location:	2481
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	3-4
Source Elev. (ft):	100-500
Centerline Slope:	other
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2480+30
IRP 2006 North Margin:	2481+50
Photo #:	6083, 6084



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GEOLOGIC HAZARD SUMMARY
ARRANGED BY IRP 2006 STATIONING
LYNN CANAL HIGHWAY PHASE I
ZONE 4 GEOTECHNICAL INVESTIGATION

ADOT / LYNN CANAL HWY ZONE 4 / AK

G-158




RF39 & RF40. View east/upslope at rockfall hazards RF39 (right) and RF40 (left).

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION			
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	CHECK	RGD				
	DATE	12/05/06				
FILE No.	GEO_HAZ_SUMM.PPT	DATE	12/05/06	ADOT / LYNN CANAL HWY ZONE 4 / AK		G-159
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RF40. View west/upslope at rockfall hazard. Photo taken 80 ft right of IRP 2006 2487+00.

Hazard ID #:	RF40
Hazard Type:	rockfall
HIN:	147
Rating:	B
IRP 2006 Location:	2487
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	3-4
Source Elev. (ft):	100-500
Centerline Slope:	-
Alignment Location:	below_deposition _zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	2484+00
IRP 2006 North Margin:	2488+70
Photo #:	5182, 5964, 6085

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION			
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	CHECK	RGD				
FILE No.	GEO_HAZ_SUMM.PPT	DATE	12/05/06	ADOT / LYNN CANAL HWY ZONE 4 / AK		G-160
PROJECT No.	063-5782	REV	0			



RF40. View south/down alignment at rockfall hazard. Photo taken 80 ft right of IRP 2006 2484+20.



CADD	ALF
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REV	0

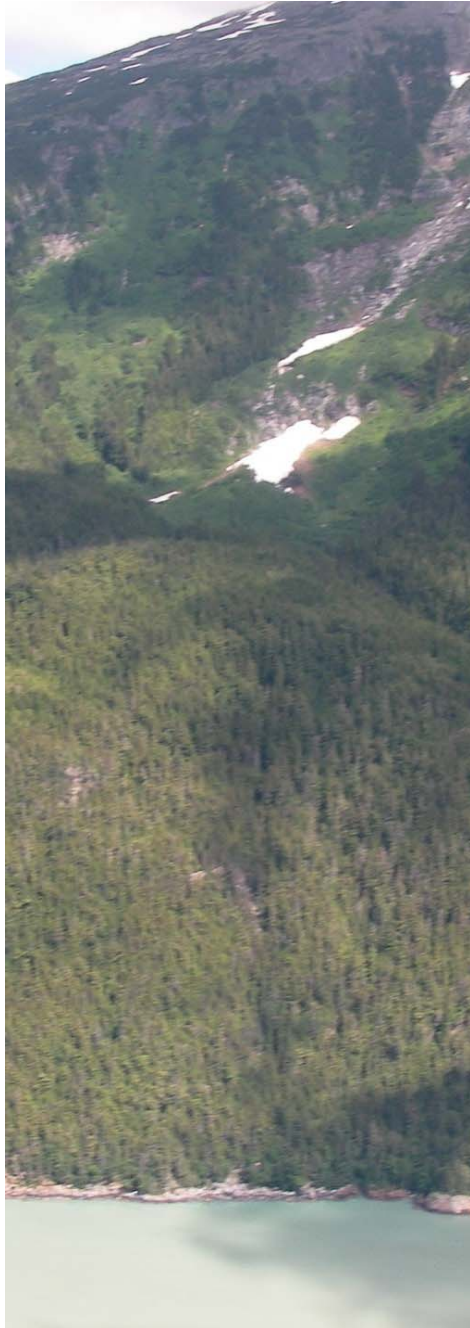
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GEOLOGIC HAZARD SUMMARY
ARRANGED BY IRP 2006 STATIONING
 LYNN CANAL HIGHWAY PHASE I
 ZONE 4 GEOTECHNICAL INVESTIGATION

FILE No.	GEO_HAZ_SUMM.PPT
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-161



DF42. View east/upslope at debris flow channel.

Hazard ID #:	DF42
Hazard Type:	debris_flow
HIN:	117
Rating:	B
IRP 2006 Location:	2491
Frequency (yrs):	5-25
Predictability:	moderate
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elev. (ft):	1000-2000
Centerline Slope:	single_channel
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2490+70
IRP 2006 North Margin:	2491+30
Photo #:	6086

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION			
	DATE	11/27/06				
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	DATE	12/05/06				
FILE No.	GEO_HAZ_SUMM.PPT	DATE	12/05/06	ADOT / LYNN CANAL HWY ZONE 4 / AK		G-162
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DF42. View east/upslope at debris flow channel.



DF42. View west/downslope at debris flow channel. Photo taken 115 ft right of IRP 2006 2490+50.



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GEOLOGIC HAZARD SUMMARY
ARRANGED BY IRP 2006 STATIONING
 LYNN CANAL HIGHWAY PHASE I
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-163

Hazard ID #:	RF41
Hazard Type:	rockfall
HIN:	129
Rating:	C
IRP 2006 Location:	2495
Frequency (yrs):	1-5
Predictability:	moderate
Material Volume (CY):	<10
Clast Size (ft):	2-3
Source Elev. (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	500+
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2495+00
IRP 2006 North Margin:	2505+00
Photo #:	5965, 6094, 6095



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GEOLOGIC HAZARD SUMMARY
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-164



RF41. View east/upslope at rockfall hazard.



RF41. View south/down alignment at rockfall stopped by a spruce tree.
Photo taken 60 ft right of IRP 2006
2499+50.



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ARRANGED BY IRP 2006 STATIONING
LYNN CANAL HIGHWAY PHASE I
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-165



RF42. View east/upslope at rockfall hazard.



RF42. View east/upslope at rockfall hazard.
Photo taken 60 ft right of IRP 2006 2500+00.

Hazard ID #:	RF42
Hazard Type:	rockfall
HIN:	105
Rating:	B
IRP 2006 Location:	2502
Frequency (yrs):	unknown (5-25?)
Predictability:	moderate
Material Volume (CY):	<10
Clast Size (ft):	0-1
Source Elev. (ft):	<100
Centerline Slope:	deciduous_trees
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	500+
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	2499+50
IRP 2006 North Margin:	2505+00
Photo #:	6094, 6095



CADD	ALF
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FILE No.	GEO_HAZ_SUMM.PPT
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ARRANGED BY IRP 2006 STATIONING
 LYNN CANAL HIGHWAY PHASE I
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-166

Hazard ID #:	HR03
Hazard Type:	hazard_rocks
HIN:	93
Rating:	C
IRP 2006 Location:	2518
Frequency (yrs):	unknown (>25?)
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elev. (ft):	<100
Centerline Slope:	-
Alignment Location:	below_deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	<50
Vegetation:	-
Deciduous Trees:	no
IRP 2006 South Margin:	2517+80
IRP 2006 North Margin:	-
Photo #:	5311, 5312

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION	G-167
	DATE	11/27/06		
	CHECK	RGD		
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HR03. View east/upslope at hazard rock. Photo taken 75 ft right of IRP 2006 2517+80.



CADD	ALF
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TITLE


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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-168

Hazard ID #:	HR04
Hazard Type:	hazard_rocks
HIN:	93
Rating:	C
IRP 2006 Location:	2526
Frequency (yrs):	unknown (>25?)
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elev. (ft):	<100
Centerline Slope:	-
Alignment Location:	below_deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	<50
Vegetation:	-
Deciduous Trees:	no
IRP 2006 South Margin:	2526+00
IRP 2006 North Margin:	-
Photo #:	5318

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION	G-169
	DATE	11/27/06		
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HR04. View south/down alignment at hazard rock. Photo taken 30 ft right of IRP 2006 2526+00.



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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-170



RF43 & RF44. View east/upslope at rockfall areas RF43 (right) and RF44 (left).



RF43. View south/down alignment at rockfall hazard, recently deposited boulder embedded into 2 ft diameter birch tree. Photo taken 30 ft right of IRP 2006 2529+00.

Hazard ID #:	RF43
Hazard Type:	rockfall
HIN:	129
Rating:	A
IRP 2006 Location:	2529
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	2-3
Source Elev. (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2528+00
IRP 2006 North Margin:	2529+70
Photo #:	3648, 5969



CADD	ALF
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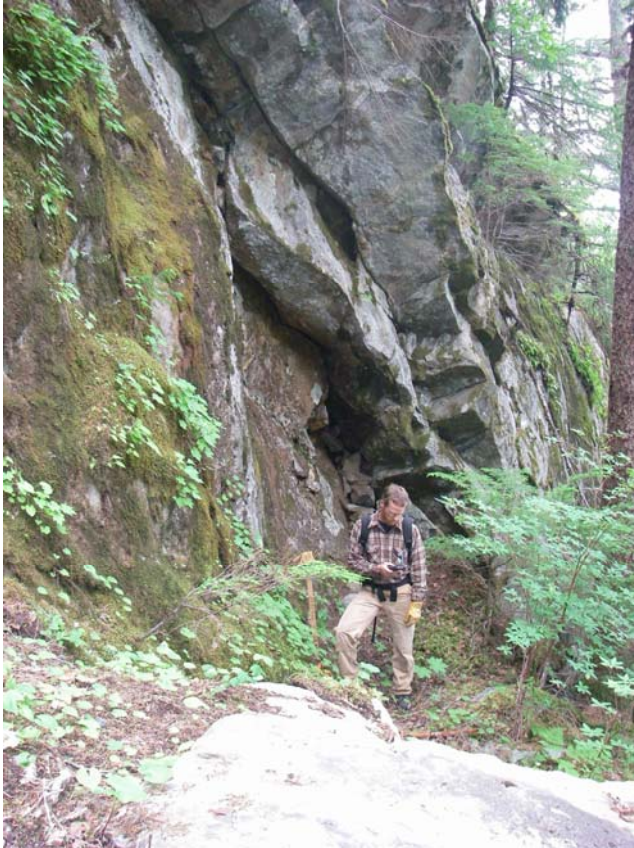
FILE No.	GEO_HAZ_SUMM.PPT
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GEOLOGIC HAZARD SUMMARY
ARRANGED BY IRP 2006 STATIONING
 LYNN CANAL HIGHWAY PHASE I
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-171



RF44. View south/down alignment at rockfall hazard. Photo taken 10 ft left of IRP 2006 2531+20.

Hazard ID #:	RF44
Hazard Type:	rockfall
HIN:	147
Rating:	B
IRP 2006 Location:	2531
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	1-2
Source Elev. (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	2531+00
IRP 2006 North Margin:	2533+20
Photo #:	1565, 5326, 5327

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION		
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RF45. View west/downslope at rockfall with fresh rockfall stopped by spruce trees. Photo taken 20 ft right of IRP 2006 2537+00.

Hazard ID #:	RF45
Hazard Type:	rockfall
HIN:	129
Rating:	A
IRP 2006 Location:	2537
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	1-2
Source Elev. (ft):	100-500
Centerline Slope:	-
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	-
Deciduous Trees:	no
IRP 2006 South Margin:	2536+10
IRP 2006 North Margin:	2537+80
Photo #:	6098, 6099



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LYNN CANAL HIGHWAY PHASE I
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-173



RF46. View north/up alignment at rockfall hazard cliffs. Photo taken 150 ft right of IRP 2006 2546+00.



RF46. View northwest (up alignment and downslope) at rockfall hazard area. Photo taken 150 ft right of IRP 2006 2546+00.

Hazard ID #:	RF46
Hazard Type:	rockfall
HIN:	111
Rating:	A
IRP 2006 Location:	2548
Frequency (yrs):	5-25
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	2-3
Source Elev. (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2546+70
IRP 2006 North Margin:	2548+30
Photo #:	5338, 5339



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 LYNN CANAL HIGHWAY PHASE I
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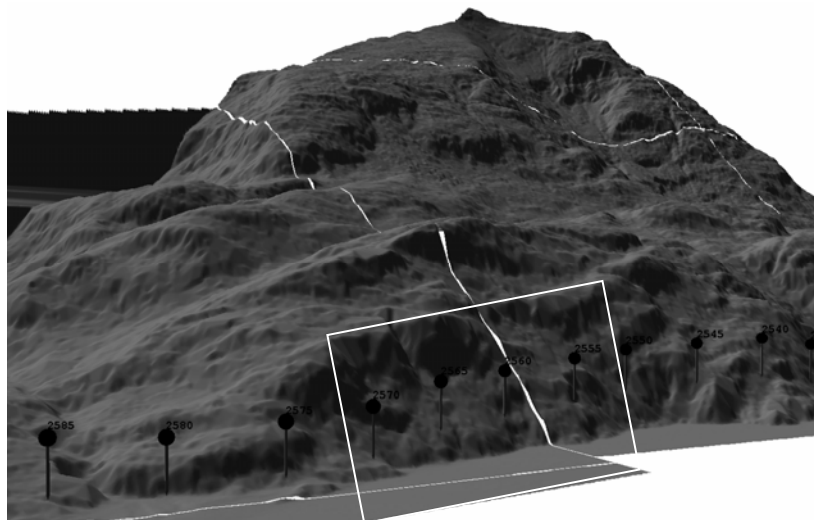
ADOT / LYNN CANAL HWY ZONE 4 / AK

G-174




View east/upslope at approximate IRP 2006 range 2550+00 to 2570+00. Regional photo for hazards listed below. Local photos and details for individual hazards follow.

RF47
LS06
HR05
RF49
RF50
RF51
LS07
DF43
RF52



LIDAR bare earth image highlighting IRP 2006 alignment 2550 to 2575.

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Hazard ID #:	RF47
Hazard Type:	rockfall
HIN:	183
Rating:	B
IRP 2006 Location:	2550
Frequency (yrs):	5-25
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	2-3
Source Elevation (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	500+
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2549+80
IRP 2006 North Margin:	2556+30
Photo #:	3660



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G-176



RF47. View east/upslope at rockfall hazard area.



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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-177



RF47. View east/upslope at rockfall.
Photo taken 220 ft right of IRP 2006
2557+00.



RF47. View north/up alignment at rockfall stopped
by tree trunk. Photo taken 30 ft right of IRP 2006
2554+00.



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G-178



LS06. View east/upslope at landslide area (green patch of disturbed vegetation in upper right photo).

Hazard ID #:	LS06
Hazard Type:	landslide
HIN:	129
Rating:	C
IRP 2006 Location:	2552
Frequency (yrs):	unknown (>25?)
Predictability:	unpredictable
Material Volume (CY):	10-100
Clast Size (ft):	-
Source Elevation (ft):	500-1000
Centerline Slope:	open_soil_slope
Alignment Location:	below_deposition _zone
Impact Alignment:	no
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	2552+80
IRP 2006 North Margin:	2554+00
Photo #:	5185, 5341, 5342



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G-179

Hazard ID #:	HR05
Hazard Type:	hazard_rocks
HIN:	93
Rating:	C
IRP 2006 Location:	2554
Frequency (yrs):	unknown (>25?)
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elevation (ft):	<100
Centerline Slope:	open_soil_slope
Alignment Location:	below_deposition _zone
Impact Alignment:	yes
Alignment Exposure (ft):	<50
Vegetation:	-
Deciduous Trees:	no
IRP 2006 South Margin:	2554+30
IRP 2006 North Margin:	-
Photo #:	5362, 5363



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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-180




HR05. View east/upslope at hazard rock location. The IRP 2006 alignment range for the aerial photograph is 2550 (right) to 2555 (left).

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HR05. View east/upslope at hazard rock. IRP 2006 alignment location 2554+00 at stake.

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION		
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RF49. View east/upslope at rockfall hazard below cliffs and above IRP 2006 alignment.

Hazard ID #:	RF49
Hazard Type:	rockfall
HIN:	201
Rating:	C
IRP 2006 Location:	2557
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	2-3
Source Elevation (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	500+
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2556+50
IRP 2006 North Margin:	2562+00
Photo #:	3661, 3662, 3664



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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-183



RF49. View east/upslope at the north half of rockfall area.



RF49. View south/down alignment across rockfall hazard. Photo taken 130 ft right of IRP 2006 2560+00.



RF49. View north/up alignment across rockfall hazard. Photo taken 110 ft right of IRP 2006 2565+50.



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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-184

Hazard ID #:	RF50
Hazard Type:	rockfall
HIN:	147
Rating:	B
IRP 2006 Location:	2558
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	2-3
Source Elevation (ft):	500-1000
Centerline Slope:	open_soil_slope
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2557+80
IRP 2006 North Margin:	2558+40
Photo #:	3661, 3662, 3664

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION			
	DATE	11/27/06				
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RF50. View east/upslope at rockfall area.



RF50. View north/up alignment
at margin of rockfall hazard.
Photo taken 40 ft right of IRP
2006 2558+30.



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LYNN CANAL HIGHWAY PHASE I
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-186

Hazard ID #:	RF51
Hazard Type:	rockfall
HIN:	147
Rating:	B
IRP 2006 Location:	2560
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	2-3
Source Elevation (ft):	500-1000
Centerline Slope:	open_soil_slope
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2559+30
IRP 2006 North Margin:	2560+50
Photo #:	3661, 3662, 3664



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TITLE

GEOLOGIC HAZARD SUMMARY
ARRANGED BY IRP 2006 STATIONING
 LYNN CANAL HIGHWAY PHASE I
 ZONE 4 GEOTECHNICAL INVESTIGATION


FILE No. GEO_HAZ_SUMM.PPT
 PROJECT No. 063-5782

ADOT / LYNN CANAL HWY ZONE 4 / AK

G-187



RF51. View east/upslope at rockfall hazard.

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RF51. View north/up alignment across steep face of rockfall hazard.
Photo taken 160 ft right of IRP 2006 2560+50.



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GEOLOGIC HAZARD SUMMARY
ARRANGED BY IRP 2006 STATIONING
 LYNN CANAL HIGHWAY PHASE I
 ZONE 4 GEOTECHNICAL INVESTIGATION

FILE No.	GEO_HAZ_SUMM.PPT
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LS07. View east/upslope at landslide.

Hazard ID #:	LS07
Hazard Type:	landslide
HIN:	129
Rating:	C
IRP 2006 Location:	2561
Frequency (yrs):	unknown (>25?)
Predictability:	unpredictable
Material Volume (CY):	10-100
Clast Size (ft):	-
Source Elevation (ft):	500-1000
Centerline Slope:	open_soil_slope
Alignment Location:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	no
IRP 2006 South Margin:	2561+80
IRP 2006 North Margin:	2562+80
Photo #:	5024



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**GEOLOGIC HAZARD SUMMARY
ARRANGED BY IRP 2006 STATIONING
LYNN CANAL HIGHWAY PHASE I
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FILE No. GEO_HAZ_SUMM.PPT
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-190




DF43. View north/upslope at debris flow channel. Photo taken 160 ft right of IRP 2006 2563+40.

Hazard ID #:	DF43
Hazard Type:	debris_flow
HIN:	63
Rating:	A
IRP 2006 Location:	2563
Frequency (yrs):	5-25
Predictability:	moderate
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elevation (ft):	500-1000
Centerline Slope:	single_channel
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	yes
IRP 2006 South Margin:	2563+30
IRP 2006 North Margin:	2564+10
Photo #:	5356


	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION			
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DF43. View east/upslope at debris flow channel.

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION	G-192
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Hazard ID #:	RF52
Hazard Type:	rockfall
HIN:	123
Rating:	B
IRP 2006 Location:	2568
Frequency (yrs):	1-5
Predictability:	high
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elevation (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	500+
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2564+70
IRP 2006 North Margin:	2570+60
Photo #:	6105, 6106

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION		
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RF52. View east/upslope at rockfall hazard.



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GEOLOGIC HAZARD SUMMARY
ARRANGED BY IRP 2006 STATIONING
 LYNN CANAL HIGHWAY PHASE I
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FILE No.	GEO_HAZ_SUMM.PPT
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-194



RF52. View south/down alignment at recent rockfall.
Photo taken 170 ft right of IRP 2006 2565+00.

	CADD	ALF	GEOLOGIC HAZARD SUMMARY ARRANGED BY IRP 2006 STATIONING LYNN CANAL HIGHWAY PHASE I ZONE 4 GEOTECHNICAL INVESTIGATION			
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RF52. View east/upslope at source for rockfall hazard. Slope-parallel joints promote planar failure. Photo taken 200 ft right of IRP 2006 2565+20.



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GEOLOGIC HAZARD SUMMARY
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 LYNN CANAL HIGHWAY PHASE I
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ADOT / LYNN CANAL HWY ZONE 4 / AK

G-196

Hazard ID #:	RF53
Hazard Type:	rockfall
HIN:	201
Rating:	A
IRP 2006 Location:	2620
Frequency (yrs):	25+
Predictability:	unpredictable
Material Volume (CY):	100-1000
Clast Size (ft):	4+
Source Elevation (ft):	100-500
Centerline Slope:	fan
Alignment Location:	below_deposition_ zone
Impact Alignment:	yes
Alignment Exposure (ft):	500+
Vegetation:	disturbed
Deciduous Trees:	yes
IRP 2006 South Margin:	2618+90
IRP 2006 North Margin:	2626+00
Photo #:	3683, 3684



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TITLE

GEOLOGIC HAZARD SUMMARY
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 LYNN CANAL HIGHWAY PHASE I
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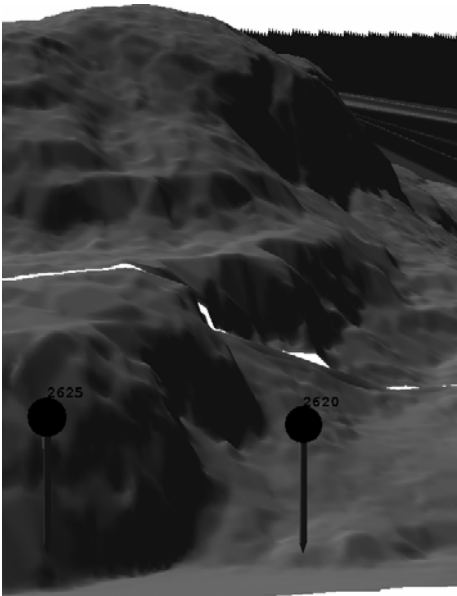
FILE No.	GEO_HAZ_SUMM.PPT
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ADOT / LYNN CANAL HWY ZONE 4 / AK


G-197



RF53. View east/upslope at rockfall hazard.



RF53. LIDAR bare earth image of local topography surrounding rockfall hazard. IRP 2006 alignment location 2620+00.

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