




RF37. View east/upslope at rockfall hazard.

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RF38. View south/down alignment at typical talus field within rockfall hazard.

Hazard ID #:	RF38
Hazard Type:	rockfall
HIN:	33
Rating:	B
2012 SEIS Alignment Location:	2481
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:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
2012 SEIS Alignment South Margin:	2480+90
2012 SEIS Alignment North Margin:	2481+80
Photo #:	6092



RF39. View south/down alignment at rockfall hazard.



RF39. View east/upslope at rockfall.

Hazard ID #:	RF39
Hazard Type:	rockfall
HIN:	129
Rating:	B
2012 SEIS Alignment Location:	2488
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
2012 SEIS Alignment South Margin:	2488+00
2012 SEIS Alignment North Margin:	2489+00
Photo #:	6083, 6084



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



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RF40. View west/upslope at rockfall hazard.

Hazard ID #:	RF40
Hazard Type:	rockfall
HIN:	147
Rating:	B
2012 SEIS Alignment Location:	2494
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	3-4
Source Elev. (ft):	100-500
Centerline Slope:	-
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	no
2012 SEIS Alignment South Margin:	2491+60
2012 SEIS Alignment North Margin:	2496+20
Photo #:	5182, 5964, 6085




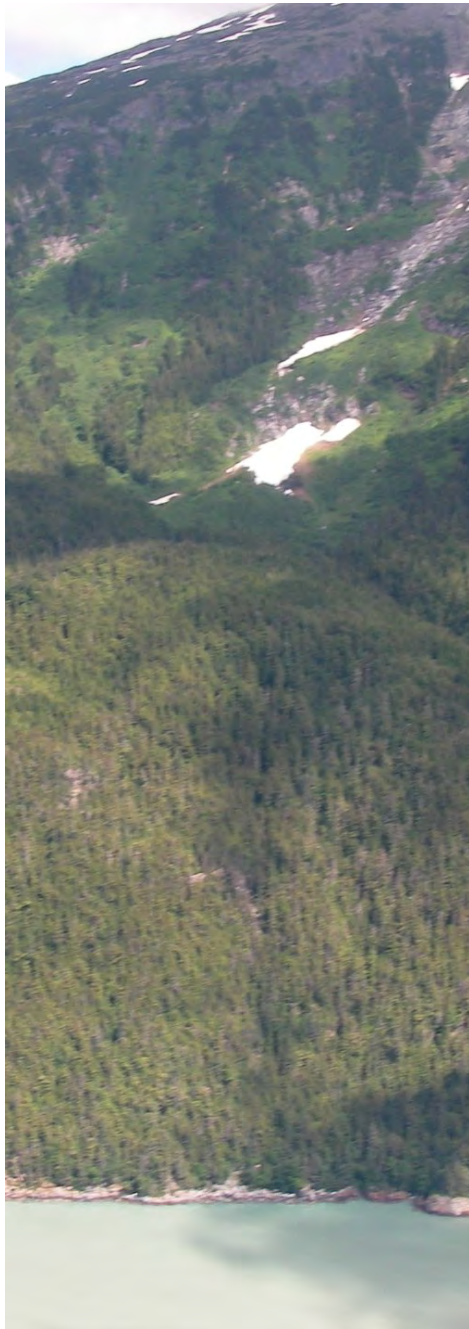
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RF40. View south/down alignment at rockfall hazard.

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DF42. View east/upslope at debris flow channel.


Hazard ID #:	DF42
Hazard Type:	debris_flow
HIN:	117
Rating:	B
2012 SEIS Alignment Location:	2498
Frequency (yrs):	5-25
Predictability:	moderate
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
2012 SEIS Alignment South Margin:	2498+10
2012 SEIS Alignment North Margin:	2498+90
Photo #:	6086



DF42. View east/upslope at debris flow channel.




DF42. View west/downslope at debris flow channel.

	CADD	ECC	<b>TITLE</b> <b>GEOLOGIC HAZARD SUMMARY</b> <b>ARRANGED BY 2012 SEIS STATIONING</b> <b>LYNN CANAL HIGHWAY PHASE 2</b> <b>2012 SEIS ALIGNMENT HAZARD REVISIONS</b>		
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Hazard ID #:	RF41
Hazard Type:	rockfall
HIN:	93
Rating:	C
2012 SEIS Alignment Location:	2505
Frequency (yrs):	1-5
Predictability:	moderate
Material Volume (CY):	<10
Clast Size (ft):	2-3
Source Elev. (ft):	500-1000
Centerline Slope:	open_soil_slope
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
2012 SEIS Alignment South Margin:	2502+50
2012 SEIS Alignment North Margin:	2507+20
Photo #:	5965, 6094, 6095

	CADD	ECC	<b>TITLE</b> <b>GEOLOGIC HAZARD SUMMARY</b> <b>ARRANGED BY 2012 SEIS STATIONING</b> <b>LYNN CANAL HIGHWAY PHASE 2</b> <b>2012 SEIS ALIGNMENT HAZARD REVISIONS</b>		
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RF41. View east/upslope at rockfall hazard.



RF41. View south/down alignment at rockfall stopped by a spruce tree.



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RF42. View east/upslope at rockfall hazard.



RF42. View east/upslope at rockfall hazard.

Hazard ID #:	RF42
Hazard Type:	rockfall
HIN:	111
Rating:	B
2012 SEIS Alignment Location:	2507
Frequency (yrs):	unknown (5-25?)
Predictability:	moderate
Material Volume (CY):	<10
Clast Size (ft):	0-1
Source Elev. (ft):	100-500
Centerline Slope:	deciduous_trees
Alignment Location:	path
Impact Alignment:	yes
Alignment Exposure (ft):	500+
Vegetation:	denuded
Deciduous Trees:	yes
2012 SEIS Alignment South Margin:	2502+50
2012 SEIS Alignment North Margin:	2512+40
Photo #:	6094, 6095

Hazard ID #:	HR03
Hazard Type:	hazard_rocks
HIN:	105
Rating:	C
2012 SEIS Alignment Location:	2525
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:	yes
Alignment Exposure (ft):	50-200
Vegetation:	-
Deciduous Trees:	no
2012 SEIS Alignment South Margin:	2524+45
2012 SEIS Alignment North Margin:	2525+10
Photo #:	5311, 5312



**Golder Associates**

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HR03. View east/upslope at hazard rock.

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Hazard ID #:	HR04
Hazard Type:	hazard_rocks
HIN:	105
Rating:	C
2012 SEIS Alignment Location:	2533
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:	yes
Alignment Exposure (ft):	50-200
Vegetation:	-
Deciduous Trees:	no
2012 SEIS Alignment South Margin:	2533+00
2012 SEIS Alignment North Margin:	2533+70
Photo #:	5318



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HR04. View south/down alignment at hazard rock.

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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.

Hazard ID #:	RF43
Hazard Type:	rockfall
HIN:	129
Rating:	A
2012 SEIS Alignment Location:	2536
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:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
2012 SEIS Alignment South Margin:	2535+20
IRP 2006 North Margin:	2537+20
Photo #:	3648, 5969



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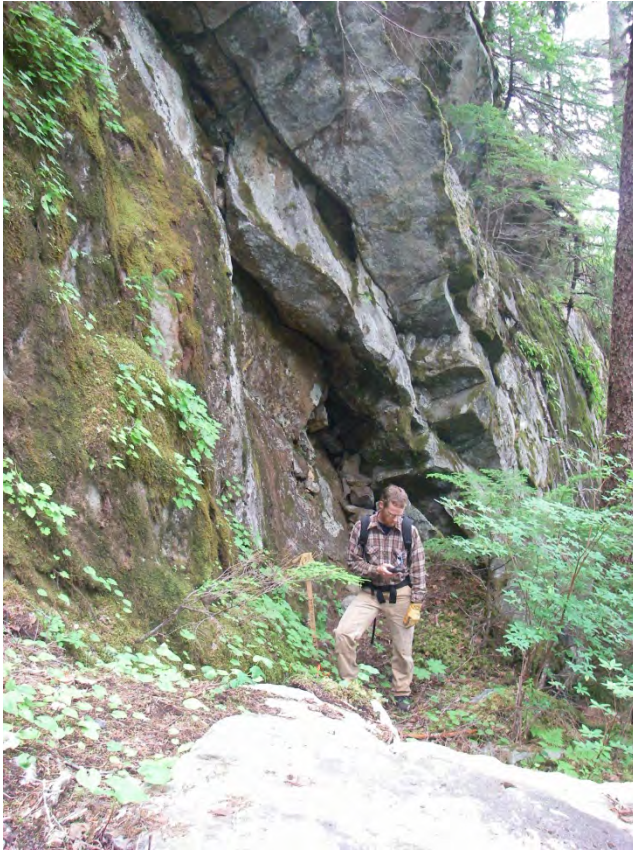
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RF44. View south/down alignment at rockfall hazard.

Hazard ID #:	RF44
Hazard Type:	rockfall
HIN:	147
Rating:	B
2012 SEIS Alignment Location:	2540
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
2012 SEIS Alignment South Margin:	2538+40
2012 SEIS Alignment North Margin:	2540+70
Photo #:	1565, 5326, 5327



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RF45. View west/downslope at rockfall with fresh rockfall stopped by spruce trees.

Hazard ID #:	RF45
Hazard Type:	rockfall
HIN:	129
Rating:	B
2012 SEIS Alignment Location:	2544
Frequency (yrs):	1-5
Predictability:	unpredictable
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:	-
Deciduous Trees:	no
2012 SEIS Alignment South Margin:	2543+00
2012 SEIS Alignment North Margin:	2545+00
Photo #:	6098, 6099



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RF46. View north/up alignment at rockfall hazard cliffs.



RF46. View northwest (up alignment and downslope) at rockfall hazard area.

Hazard ID #:	RF46
Hazard Type:	rockfall
HIN:	111
Rating:	B
2012 SEIS Alignment Location:	2556
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:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
2012 SEIS Alignment South Margin:	2555+50
2012 SEIS Alignment North Margin:	2557+10
Photo #:	5338, 5339



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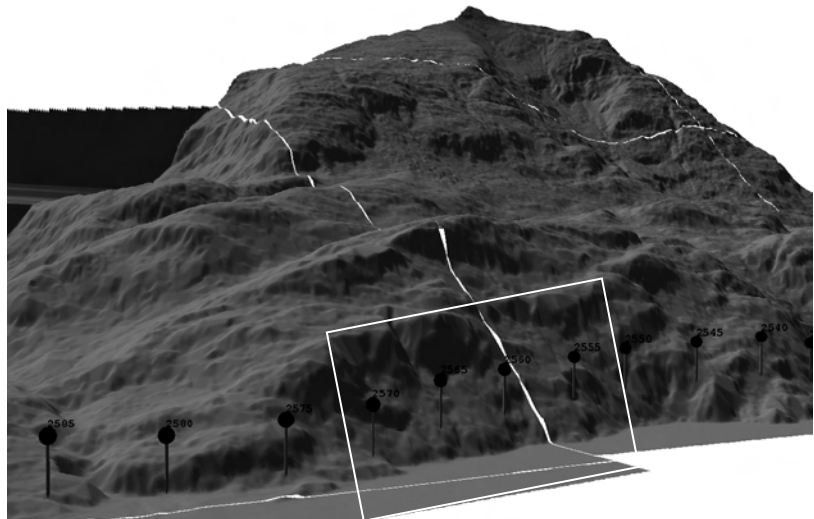
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Regional photo, view east/upslope, at hazards listed below. Local photos and details for individual hazards follow.


- RF47
- LS06
- HR05
- RF49
- RF50
- RF51
- LS07
- DF43
- RF52



LIDAR bare earth image highlighting the regional photo above. Station labels represent previous IRP 2006 alignment.

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Hazard ID #:	RF47
Hazard Type:	rockfall
HIN:	183
Rating:	B
2012 SEIS Alignment Location:	2561
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:	below_deposition _zone
Impact Alignment:	no
Alignment Exposure (ft):	500+
Vegetation:	disturbed
Deciduous Trees:	yes
2012 SEIS Alignment South Margin:	2558+50
2012 SEIS Alignment North Margin:	2565+00
Photo #:	3660

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RF47. View east/upslope at rockfall hazard area.



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RF47. View east/upslope at rockfall.



RF47. View north/up alignment at rockfall stopped by tree trunk.



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

Hazard ID #:	LS06
Hazard Type:	landslide
HIN:	183
Rating:	C
2012 SEIS Alignment Location:	2562
Frequency (yrs):	unknown (>25?)
Predictability:	unpredictable
Material Volume (CY):	10-100
Clast Size (ft):	-
Source Elevation (ft):	>1000
Centerline Slope:	open_soil_slope
Alignment Location:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	no
2012 SEIS Alignment South Margin:	2561+60
2012 SEIS Alignment North Margin:	2562+80
Photo #:	5185, 5341, 5342



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Hazard ID #:	HR05
Hazard Type:	hazard_rocks
HIN:	105
Rating:	C
2012 SEIS Alignment Location:	2562
Frequency (yrs):	unknown (>25?)
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	4+
Source Elevation (ft):	100-500
Centerline Slope:	open_soil_slope
Alignment Location:	below_deposition _zone
Impact Alignment:	yes
Alignment Exposure (ft):	50-200
Vegetation:	-
Deciduous Trees:	no
2012 SEIS Alignment South Margin:	2562+20
2012 SEIS Alignment North Margin:	2562+80
Photo #:	5362, 5363




HR05. View east/upslope at hazard rock location.

	CADD	ECC	<b>TITLE</b> <b>GEOLOGIC HAZARD SUMMARY</b> <b>ARRANGED BY 2012 SEIS STATIONING</b> <b>LYNN CANAL HIGHWAY PHASE 2</b> <b>2012 SEIS ALIGNMENT HAZARD REVISIONS</b>
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HR05. View east/upslope at hazard rock. Survey lath represents previous IRP 2006 alignment.

	CADD	ECC	<b>TITLE</b> <b>GEOLOGIC HAZARD SUMMARY</b> <b>ARRANGED BY 2012 SEIS STATIONING</b> <b>LYNN CANAL HIGHWAY PHASE 2</b> <b>2012 SEIS ALIGNMENT HAZARD REVISIONS</b>
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RF49. View east/upslope at rockfall hazard below cliffs.

Hazard ID #:	RF49
Hazard Type:	rockfall
HIN:	201
Rating:	C
2012 SEIS Alignment Location:	2566
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
2012 SEIS Alignment South Margin:	2565+00
2012 SEIS Alignment North Margin:	2571+00
Photo #:	3661, 3662, 3664

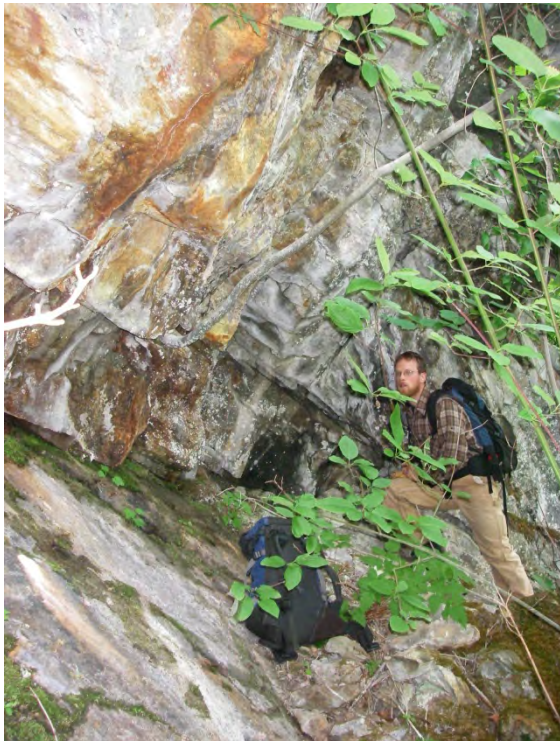


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RF49. View east/upslope at the north half of rockfall area.



RF49. View south/down alignment across rockfall hazard.



RF49. View north/up alignment across rockfall hazard.



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Hazard ID #:	RF50
Hazard Type:	rockfall
HIN:	129
Rating:	B
2012 SEIS Alignment Location:	2567
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):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
2012 SEIS Alignment South Margin:	2566+70
2012 SEIS Alignment North Margin:	2567+30
Photo #:	3661, 3662, 3664




RF50. View east/upslope at rockfall area.



RF50. View north/up alignment at margin of rockfall hazard.

	CADD	ECC	<b>TITLE</b> <b>GEOLOGIC HAZARD SUMMARY</b> <b>ARRANGED BY 2012 SEIS STATIONING</b> <b>LYNN CANAL HIGHWAY PHASE 2</b> <b>2012 SEIS ALIGNMENT HAZARD REVISIONS</b>		
	DATE	9/10/12			
	CHECK	RGD			
FILE No.	GEO_HAZ_SUMM.PPT	DATE	9/24/12	<b>HDR / 2012 SEIS JUNEAU ACCESS / AK</b>	<b>G-163</b>
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Hazard ID #:	RF51
Hazard Type:	rockfall
HIN:	201
Rating:	B
2012 SEIS Alignment Location:	2568
Frequency (yrs):	1-5
Predictability:	unpredictable
Material Volume (CY):	<10
Clast Size (ft):	2-3
Source Elevation (ft):	>1000
Centerline Slope:	open_soil_slope
Alignment Location:	path
Impact Alignment:	no
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	yes
2012 SEIS Alignment South Margin:	2568+00
2012 SEIS Alignment North Margin:	2569+20
Photo #:	3661, 3662, 3664

	CADD	ECC	<b>TITLE</b> <b>GEOLOGIC HAZARD SUMMARY</b> <b>ARRANGED BY 2012 SEIS STATIONING</b> <b>LYNN CANAL HIGHWAY PHASE 2</b> <b>2012 SEIS ALIGNMENT HAZARD REVISIONS</b>		
	DATE	9/10/12			
	CHECK	RGD			
	DATE	9/24/12			
FILE No.	GEO_HAZ_SUMM.PPT	DATE	9/24/12	<b>HDR / 2012 SEIS JUNEAU ACCESS / AK</b>	<b>G-164</b>
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RF51. View east/upslope at rockfall hazard.

	CADD	ECC	<b>TITLE</b> <b>GEOLOGIC HAZARD SUMMARY</b> <b>ARRANGED BY 2012 SEIS STATIONING</b> <b>LYNN CANAL HIGHWAY PHASE 2</b> <b>2012 SEIS ALIGNMENT HAZARD REVISIONS</b>
	DATE	9/10/12	
	CHECK	RGD	
FILE No.	GEO_HAZ_SUMM.PPT	DATE	9/24/12
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			HDR / 2012 SEIS JUNEAU ACCESS / AK
			<b>G-165</b>



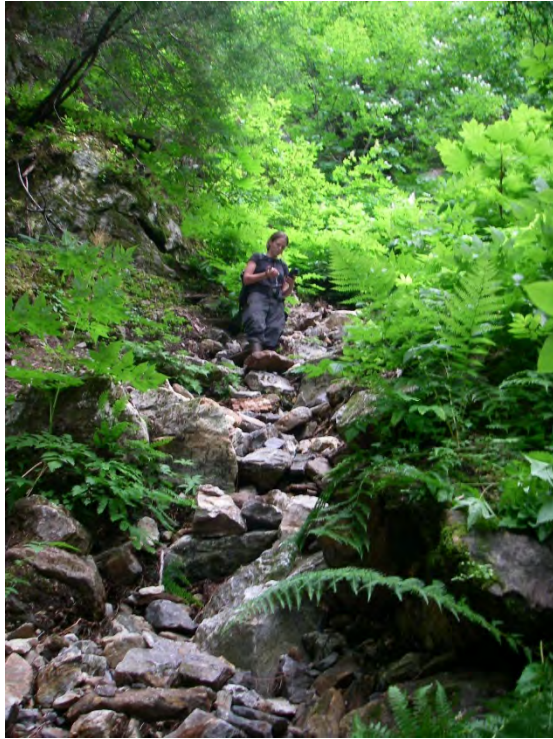
RF51. View north/up alignment across steep face of rockfall hazard.

	CADD	ECC	<b>TITLE</b> <b>GEOLOGIC HAZARD SUMMARY</b> <b>ARRANGED BY 2012 SEIS STATIONING</b> <b>LYNN CANAL HIGHWAY PHASE 2</b> <b>2012 SEIS ALIGNMENT HAZARD REVISIONS</b>		
	DATE	9/10/12			
CHECK	RGD				
DATE	9/24/12				
FILE No.	GEO_HAZ_SUMM.PPT	DATE	9/24/12	<b>HDR / 2012 SEIS JUNEAU ACCESS / AK</b>	<b>G-166</b>
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LS07. View east/upslope at landslide.

Hazard ID #:	LS07
Hazard Type:	landslide
HIN:	183
Rating:	C
2012 SEIS Alignment Location:	2571
Frequency (yrs):	unknown (>25?)
Predictability:	unpredictable
Material Volume (CY):	10-100
Clast Size (ft):	-
Source Elevation (ft):	>1000
Centerline Slope:	open_soil_slope
Alignment Location:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	50-200
Vegetation:	disturbed
Deciduous Trees:	no
2012 SEIS Alignment South Margin:	2571+00
2012 SEIS Alignment North Margin:	2572+00
Photo #:	5024



DF43. View north/upslope at debris flow channel.

Hazard ID #:	DF43
Hazard Type:	debris_flow
HIN:	117
Rating:	A
2012 SEIS Alignment Location:	2573
Frequency (yrs):	5-25
Predictability:	moderate
Material Volume (CY):	10-100
Clast Size (ft):	1-2
Source Elevation (ft):	>1000
Centerline Slope:	single_channel
Alignment Location:	below_deposition_zone
Impact Alignment:	no
Alignment Exposure (ft):	50-200
Vegetation:	denuded
Deciduous Trees:	yes
2012 SEIS Alignment South Margin:	2572+50
2012 SEIS Alignment North Margin:	2573+50
Photo #:	5356



CADD	ECC
DATE	9/10/12
CHECK	RGD

FILE No.	GEO_HAZ_SUMM.PPT	DATE	9/24/12
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DF43. View east/upslope at debris flow channel.



CADD	ECC
DATE	9/10/12
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Hazard ID #:	RF52
Hazard Type:	rockfall
HIN:	123
Rating:	B
2012 SEIS Alignment Location:	2574
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
2012 SEIS Alignment South Margin:	2573+80
2012 SEIS Alignment North Margin:	2578+80
Photo #:	6105, 6106

	CADD	ECC	<b>TITLE</b> <b>GEOLOGIC HAZARD SUMMARY</b> <b>ARRANGED BY 2012 SEIS STATIONING</b> <b>LYNN CANAL HIGHWAY PHASE 2</b> <b>2012 SEIS ALIGNMENT HAZARD REVISIONS</b>
	DATE	9/10/12	
	CHECK	RGD	
FILE No.	GEO_HAZ_SUMM.PPT	DATE	9/24/12
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RF52. View east/upslope at rockfall hazard.

	CADD	ECC	<b>TITLE</b> <b>GEOLOGIC HAZARD SUMMARY</b> <b>ARRANGED BY 2012 SEIS STATIONING</b> <b>LYNN CANAL HIGHWAY PHASE 2</b> <b>2012 SEIS ALIGNMENT HAZARD REVISIONS</b>		
	DATE	9/10/12			
	CHECK	RGD			
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RF52. View south/down alignment at recent rockfall.

	CADD	ECC	<b>TITLE</b> <b>GEOLOGIC HAZARD SUMMARY</b> <b>ARRANGED BY 2012 SEIS STATIONING</b> <b>LYNN CANAL HIGHWAY PHASE 2</b> <b>2012 SEIS ALIGNMENT HAZARD REVISIONS</b>
	DATE	9/10/12	
	CHECK	RGD	
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RF52. View east/upslope at source for rockfall hazard. Slope-parallel joints promote planar failure.

	CADD	ECC	<b>TITLE</b> <b>GEOLOGIC HAZARD SUMMARY</b> <b>ARRANGED BY 2012 SEIS STATIONING</b> <b>LYNN CANAL HIGHWAY PHASE 2</b> <b>2012 SEIS ALIGNMENT HAZARD REVISIONS</b>		
	DATE	9/10/12			
	CHECK	RGD			
FILE No.	GEO_HAZ_SUMM.PPT	DATE	9/24/12	<b>HDR / 2012 SEIS JUNEAU ACCESS / AK</b>	<b>G-173</b>
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RF53. View east/upslope at rockfall hazard outlined in photo. Hazard characteristics based on RF49 characteristics.

Hazard ID #:	RF53
Hazard Type:	rockfall
HIN:	147
Rating:	C
2012 SEIS Alignment Location:	2575
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:	-
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	-
2012 SEIS Alignment South Margin:	2572+90
2012 SEIS Alignment North Margin:	2577+00
Photo #:	-




CADD	ECC
DATE	9/10/12
CHECK	RGD

TITLE  
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Hazard ID #:	RF54
Hazard Type:	rockfall
HIN:	147
Rating:	A
2012 SEIS Alignment Location:	2629
Frequency (yrs):	25+
Predictability:	unpredictable
Material Volume (CY):	100-1000
Clast Size (ft):	4+
Source Elevation (ft):	100-500
Centerline Slope:	fan
Alignment Location:	deposition_zone
Impact Alignment:	yes
Alignment Exposure (ft):	200-500
Vegetation:	disturbed
Deciduous Trees:	yes
2012 SEIS Alignment South Margin:	2627+40
2012 SEIS Alignment North Margin:	2631+00
Photo #:	3683, 3684



**Golder Associates**

FILE No. GEO\_HAZ\_SUMM.PPT  
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TITLE

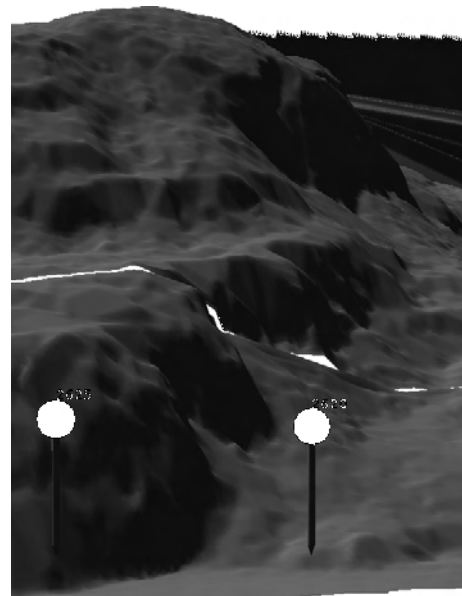
**GEOLOGIC HAZARD SUMMARY  
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RF54. View east/upslope at rockfall hazard.



RF54. Bare earth LIDAR image of local topography surrounding rockfall hazard. Station labels represent previous IRP 2006 alignment.



CADD	ECC
DATE	9/10/12
CHECK	RGD

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