

Modeling Working Group Presentation

Overview of Grand Canyon Noise Analysis Results

Presented to: 12th Meeting of the Grand Canyon Working Group
Of the National Parks Overflights Advisory Group

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Department
of the Interior



Federal Aviation
Administration



Status of Modeling Tasks

- ✓ Modeling of commercial, general aviation, and military operations
- ✓ Modeling of Alternatives A-F (base and forecast cases):
 - ✓ Contours: Time Audible
 - ✓ Contours: Equivalent Sound Level
 - ✓ Location points: Time Audible; Equivalent Sound Level; Maximum Sound Level; Time Above 5 Thresholds (35, 40, 45, 50, and 55 dBA)
- ✓ Modeling of Alternative G (base and forecast cases) for all metrics
- ✓ Modeling analyses of Alternatives A-G
 - ✓ Tabular comparison of Substantial Restoration of Natural Quiet
 - ✓ Difference contour comparison between Alternative A (Current Conditions) and other alternatives (B-G)
 - ✓ Tabular comparison of 127 location points: Time Audible; Equivalent Sound Level; Maximum Sound Level
 - ✓ Tabular comparison of 39 location points: Time Above 5 Thresholds (35, 40, 45, 50, and 55 dBA)
- To-Do: Modeling of "Modified Alternative E"



Operations Summary (Base Year)

Aircraft Scenario	# of Commercial Air Tour Operations of Peak Season "Day" for Each Alternative/Scenario								
	A	B	C	D	E	E (Off Peak)	F	F (Off Peak)	G
All Aircraft 18,000 ft MSL and Above (for Cumulative Effects Analysis)	978 (common to all alternatives)								
All Aircraft below 18,000 feet MSL and Outside the SFRA (for Cumulative Effects Analysis)	418 (common to all alternatives)								
All Aircraft below 18,000 feet MSL and Within the SFRA	651	624	493	453	472	482	642	429	616
Total Commercial Air Tour and Air Tour Related	635	608	477	437	456	466	626	413	600
Commercial Air Tours	314	287	162	116	138	136	318	149	262

- **Alternative A Peak Day (August 8, 2005):** "Peak Day" represents the day of the highest number of Commercial Air Tour and Air Tour Related operations within GCNP in 2005 – i.e., 635 operations, which occurred on August 8, 2005.
- **Alternatives B, C, D, and F:** The number of ops is based on the peak day with expected increases and decreases in operations for route-use. Route-use was based on operator interviews. Note: For **Alternative D**, the daily number of ops may be further modified based on a "noise budget" (not currently defined).
- **Alternative E:** The daily number of ops is capped at 364 operations, excluding Hualapai "Exempt" flights from GC West.

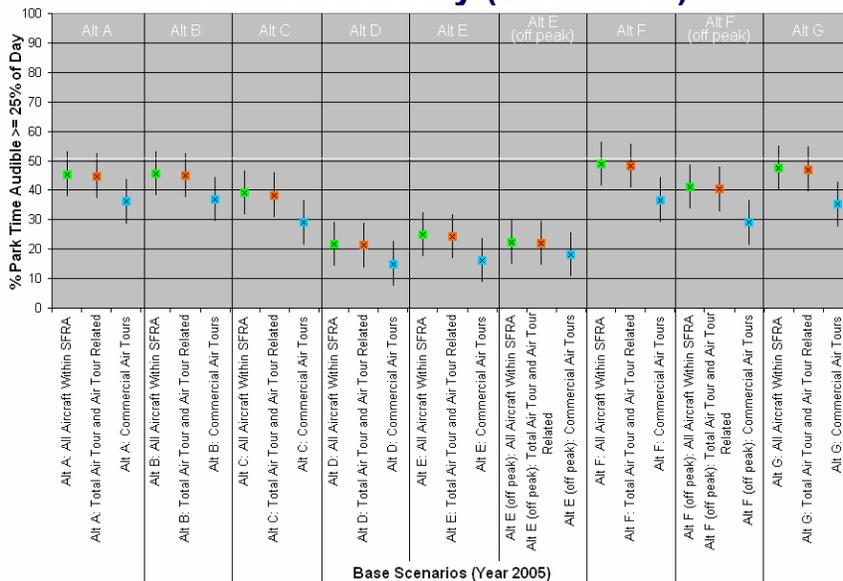


Results Summary (Base Year)

Aircraft Scenario	% of Park for aircraft audibility ≥ 25% for Each Alternative/Scenario (% of Park "Restored")								
	A	B	C	D	E	E (Off Peak)	F	F (Off Peak)	G
All Aircraft 18,000 ft MSL and Above (for Cumulative Effects Analysis)	94.5 (5.5)								
All Aircraft below 18,000 feet MSL and Outside the SFRA (for Cumulative Effects Analysis)	11.9 (88.1)								
All Aircraft below 18,000 feet MSL and Within the SFRA	45.5 (54.5)	45.7 (54.3)	39.1 (60.9)	21.8 (78.2)	24.8 (75.2)	22.3 (77.7)	48.8 (51.2)	41.2 (58.8)	47.6 (52.4)
Total Commercial Air Tour and Air Tour Related	44.8 (55.2)	45.0 (55.0)	38.3 (61.7)	21.2 (78.8)	24.4 (75.6)	21.9 (78.1)	48.3 (51.7)	40.3 (59.7)	47.0 (53.0)
Commercial Air Tours	36.1 (63.9)	37.0 (63.0)	29.0 (71.0)	15.0 (85.0)	16.1 (83.9)	18.1 (81.9)	36.7 (63.3)	29.0 (71.0)	35.1 (64.9)
All Aircraft below 18,000 feet MSL and Within the SFRA	% of Park for aircraft audibility ≥ 50% for Each Alternative/Scenario								
	31.6	29.3	20.2	11.8	16.2	14.0	32.3	17.8	31.7
All Aircraft below 18,000 feet MSL and Within the SFRA	% of Park for aircraft audibility ≥ 75% for Each Alternative/Scenario								
	15.4	13.9	5.2	3.5	6.1	6.1	14.6	5.8	15.0



Results Summary (Base Year)



Operations Summary (10-, 15-Year)

Aircraft Scenario	# of Commercial Air Tour Operations of Peak Season "Day" for Each Alternative/Scenario									
	A	B	C	D	E	E (Off Peak)	F	F (Off Peak)	G	G (15-Yr)
All Aircraft 18,000 ft MSL and Above (for Cumulative Effects Analysis)	1263 (common to all alternatives for 2015) 1438 (for Alternative G for 2020)									
All Aircraft below 18,000 feet MSL and Outside the SFRA (for Cumulative Effects Analysis)	542 (common to all alternatives for 2015) 617 (common to Alternative G for 2020)									
All Aircraft below 18,000 feet MSL and Within the SFRA	741	710	498	515	469	475	639	425	680	698
Total Commercial Air Tour and Air Tour Related	722	691	479	496	450	456	620	406	661	675
Commercial Air Tours	358	328	165	132	137	130	311	144	290	298



Results Summary (10-, 15-Year)

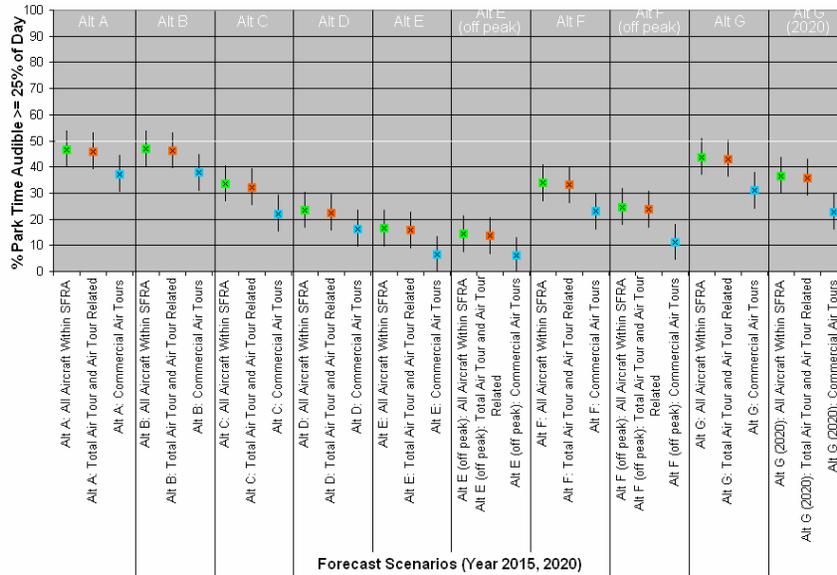
Aircraft Scenario	% of Park for aircraft audibility ≥ 25% for Each Alternative/Scenario (% of Park "Restored")									
	A	B	C	D	E	E (Off Peak)	F	F (Off Peak)	G	G (15-Yr)
All Aircraft 18,000 ft MSL and Above (for Cumulative Effects Analysis)	96.3 (3.7)									
All Aircraft below 18,000 feet MSL and Outside the SFRA (for Cumulative Effects Analysis)	28.3 (71.7)									
All Aircraft below 18,000 feet MSL and Within the SFRA	46.7 (53.3)	46.9 (53.1)	33.6 (66.4)	23.5 (76.5)	16.5 (83.5)	14.3 (85.7)	33.8 (66.2)	24.6 (75.4)	43.7 (56.3)	36.6 (63.4)
Total Commercial Air Tour and Air Tour Related	45.9 (54.1)	46.2 (53.8)	32.3 (67.7)	22.4 (77.6)	15.8 (84.2)	13.6 (86.4)	33.2 (66.8)	23.7 (76.3)	43.1 (56.9)	35.8 (64.2)
Commercial Air Tours	37.3 (62.7)	37.8 (62.2)	22.1 (77.9)	16.4 (83.6)	6.5 (93.5)	6.0 (94.0)	23.1 (76.9)	11.2 (88.8)	31.0 (69.0)	22.9 (77.1)

All Aircraft below 18,000 feet MSL and Within the SFRA	% of Park for aircraft audibility ≥ 50%									
	A	B	C	D	E	E (Off Peak)	F	F (Off Peak)	G	G (15-Yr)
	33.5	32.0	9.7	12.9	6.5	5.3	15.3	9.0	17.7	13.9

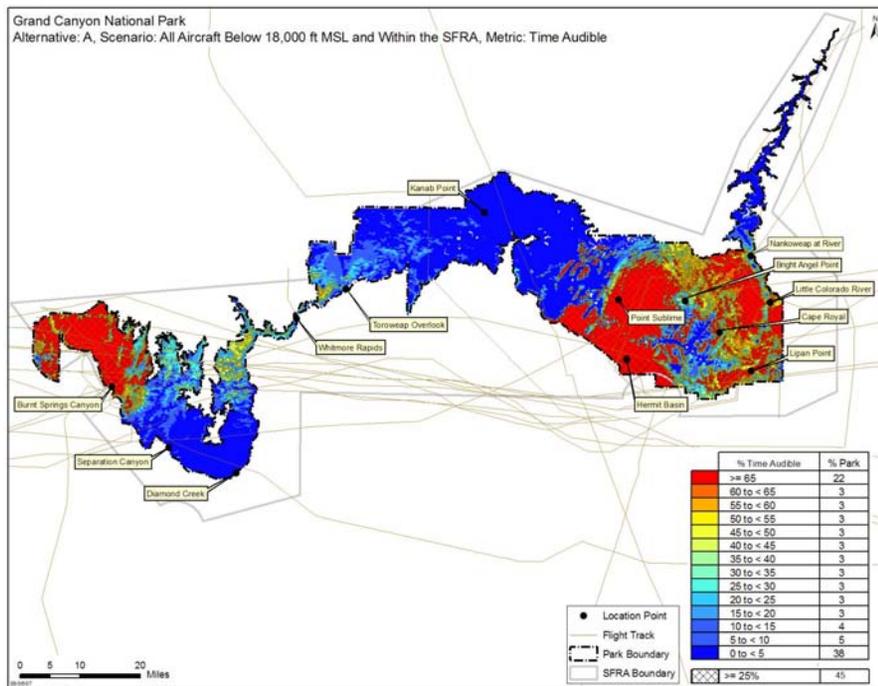
All Aircraft below 18,000 feet MSL and Within the SFRA	% of Park for aircraft audibility ≥ 75%									
	A	B	C	D	E	E (Off Peak)	F	F (Off Peak)	G	G (15-Yr)
	17.4	16.1	1.6	4.5	0.5	0.9	5.1	1.6	12.6	8.7



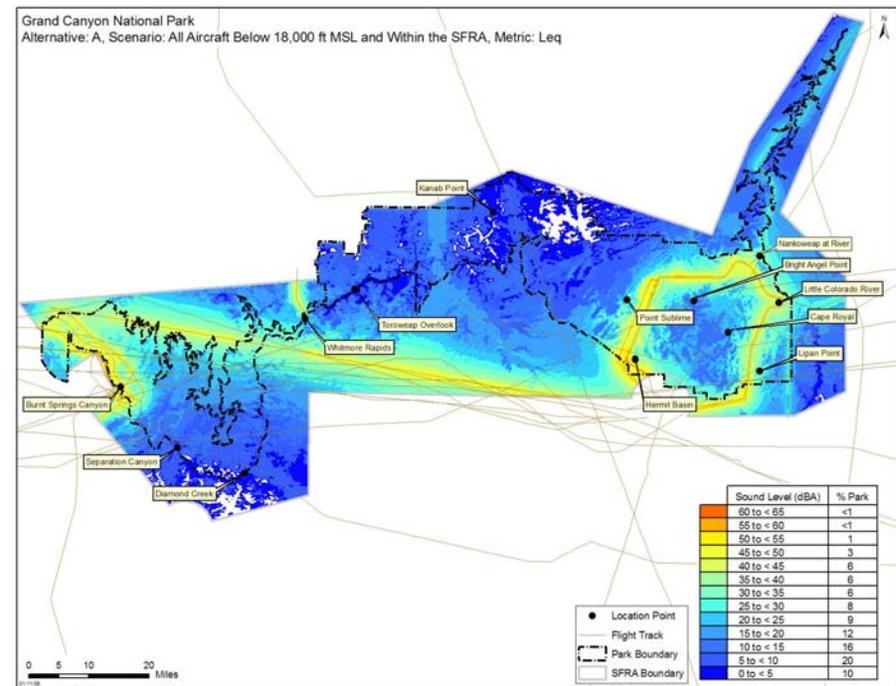
Results Summary (10-, 15-Year)



Alternative A (Base Year): All Aircraft below 18,000 feet MSL and Within the SFRA

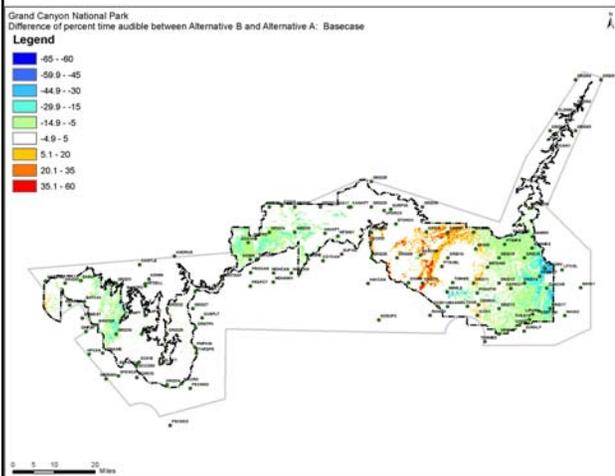


Time Audible (%)

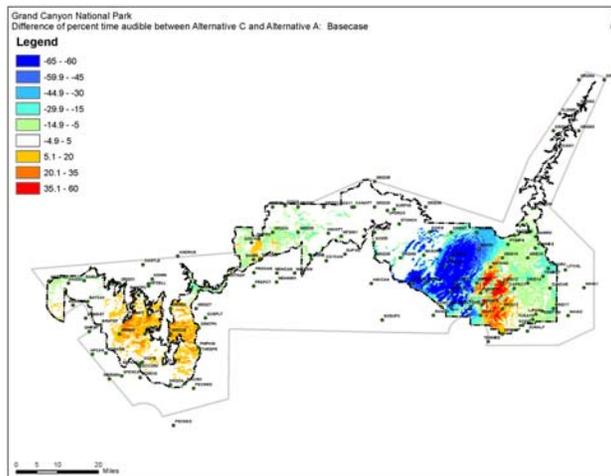


Equivalent Sound Level (dBA)

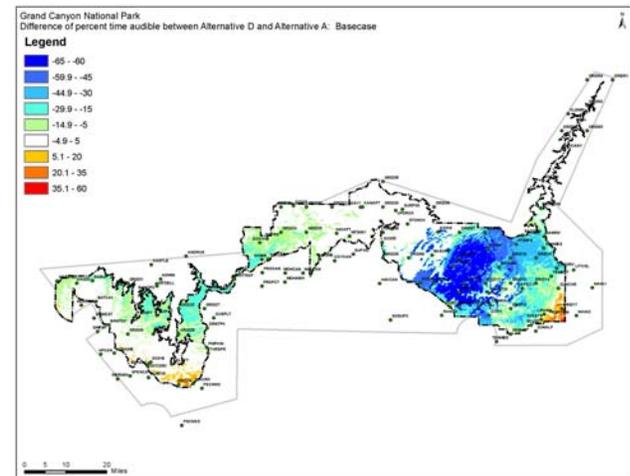
Difference Contours from Alternative A (Base Year): Time Audible



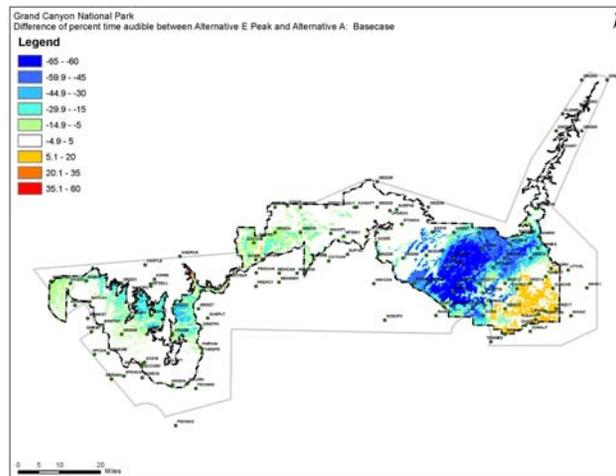
Alternative B - A



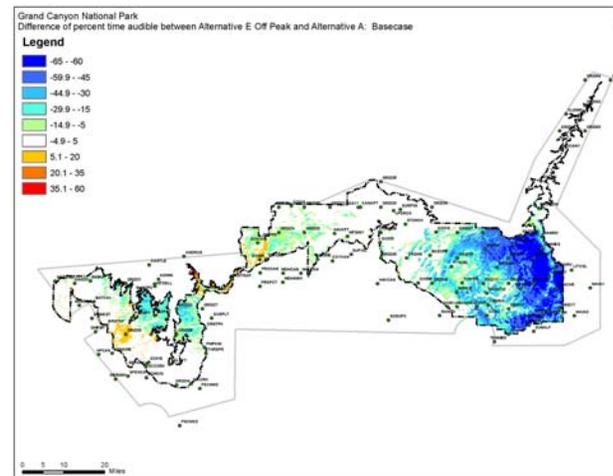
Alternative C - A



Alternative D - A

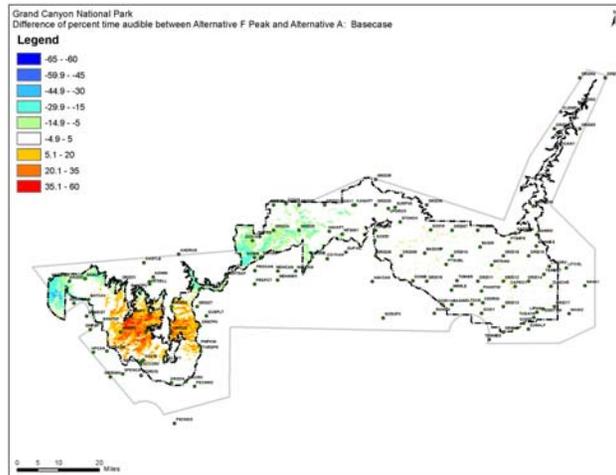


Alternative E - A

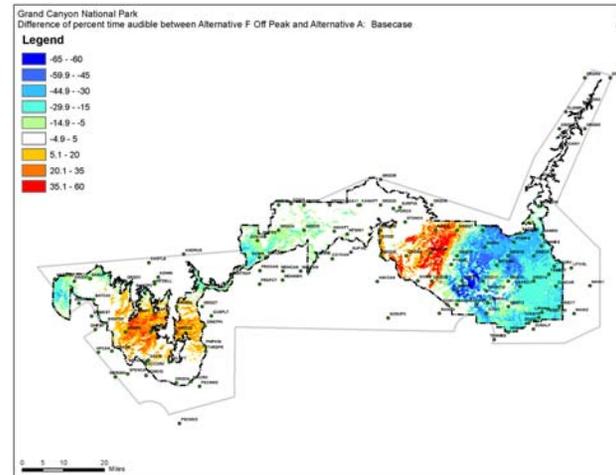


Alternative E (off peak) - A

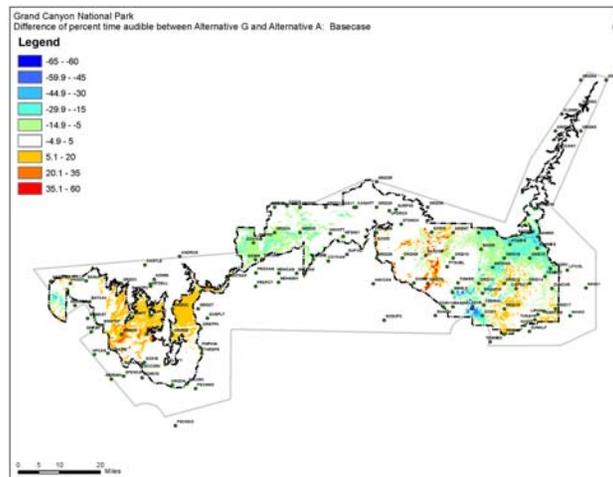
Difference Contours from Alternative A (Base Year): Time Audible



Alternative F - A

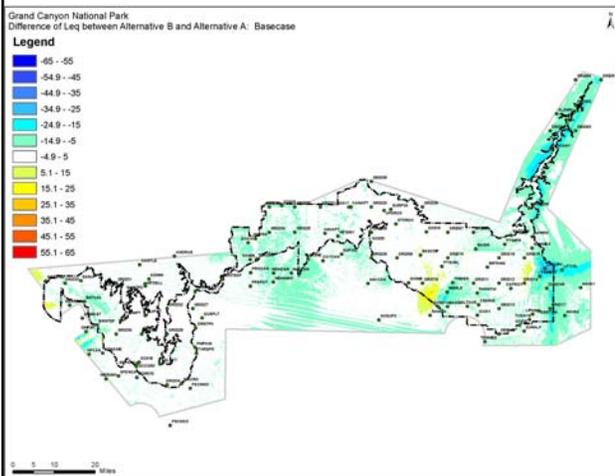


Alternative F (off peak) - A

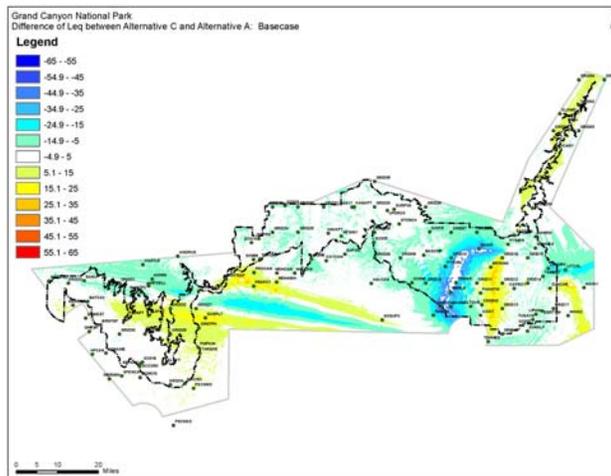


Alternative G - A

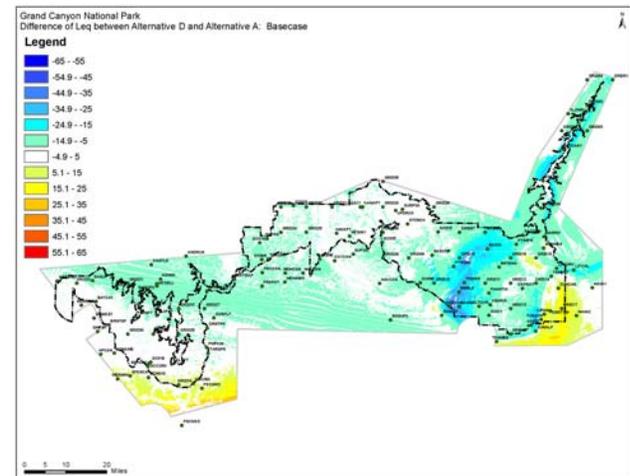
Difference Contours from Alternative A (Base Year): L_{Aeq12h}



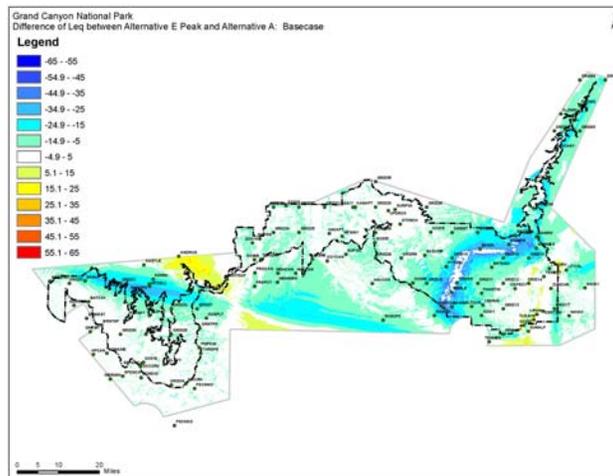
Alternative B - A



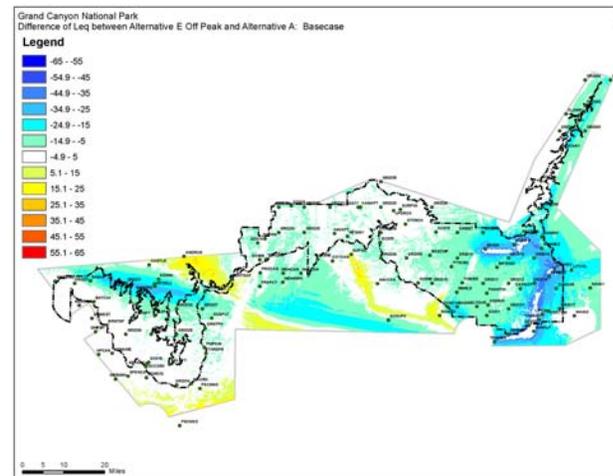
Alternative C - A



Alternative D - A

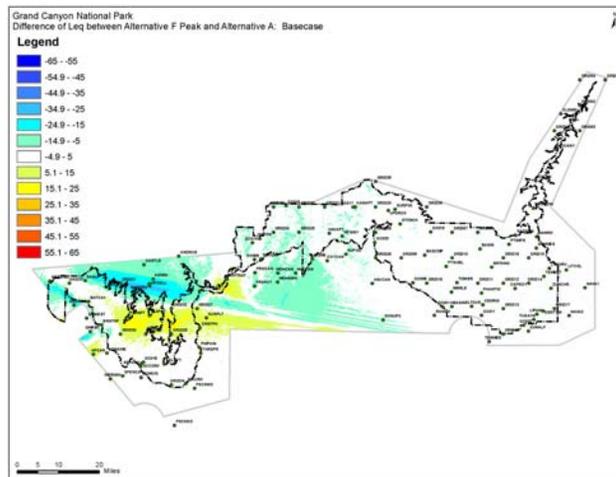


Alternative E - A

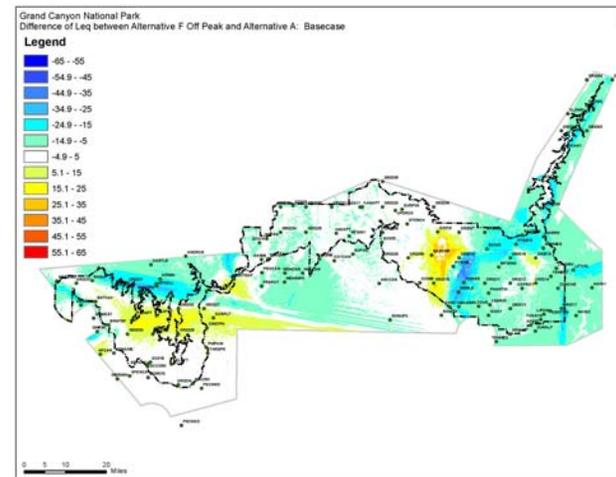


Alternative E (off peak) - A

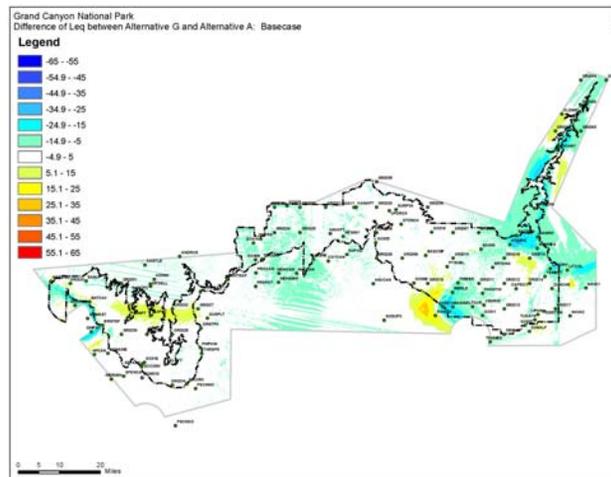
Difference Contours from Alternative A (Base Year): L_{Aeq12h}



Alternative F - A

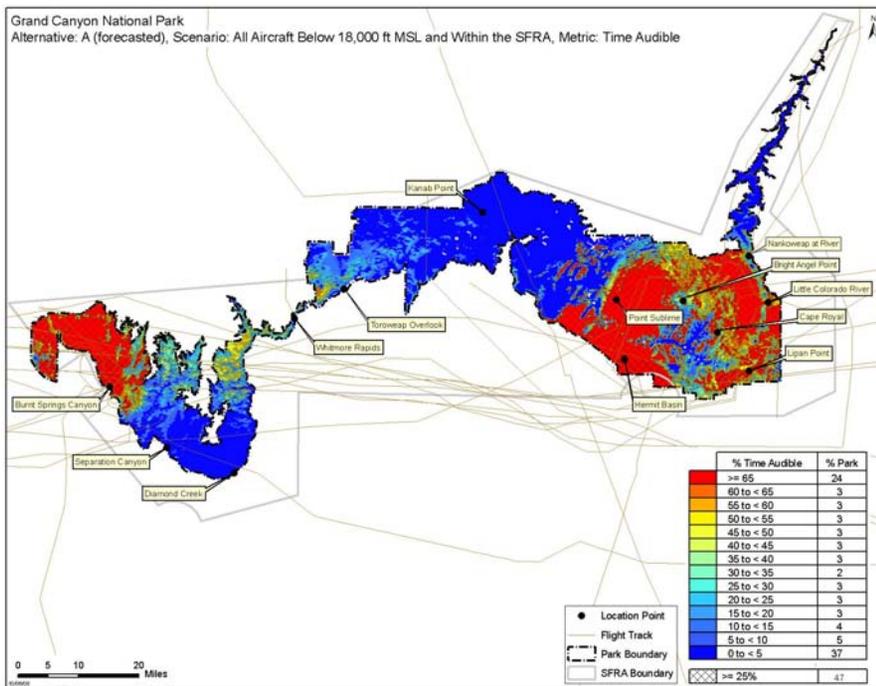


Alternative F (off peak) - A

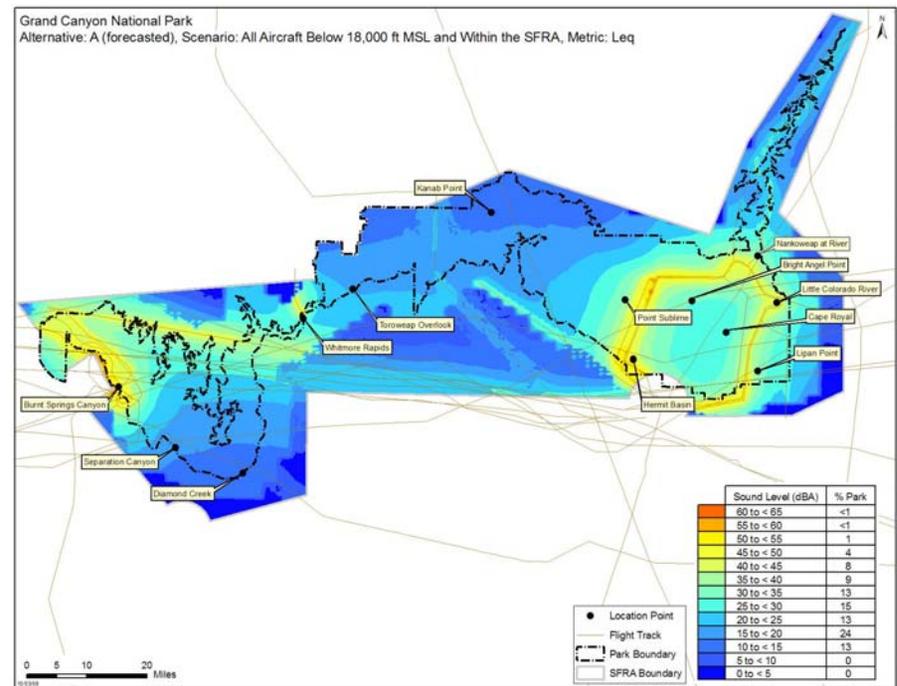


Alternative G - A

Alternative A (10-Yr Forecast): All Aircraft below 18,000 feet MSL and Within the SFRA

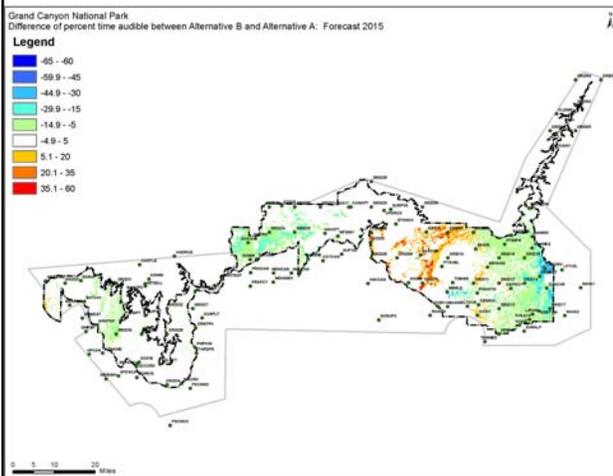


Time Audible (%)

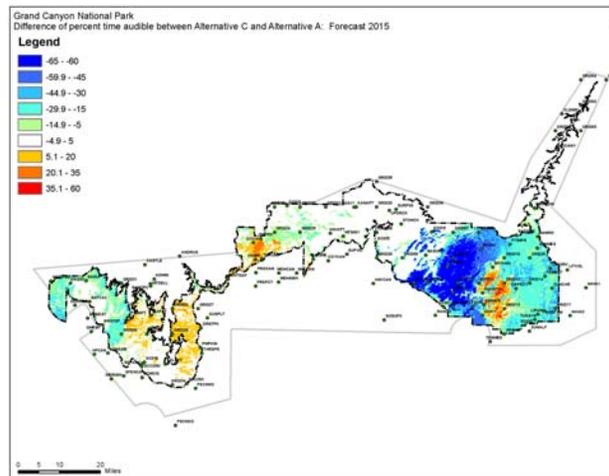


Equivalent Sound Level (dBA)

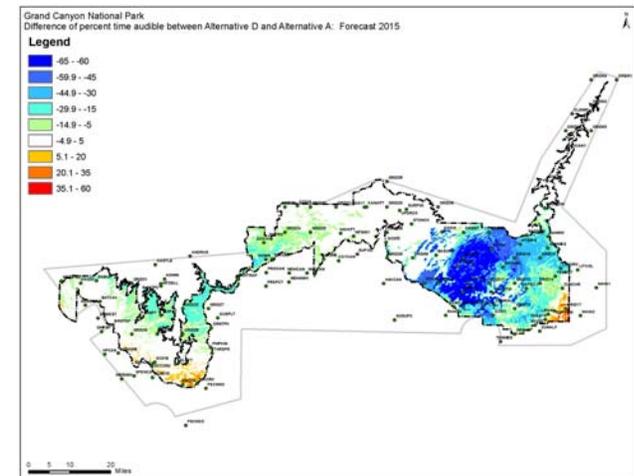
Difference Contours from Alternative A (10-Yr Forecast): Time Audible



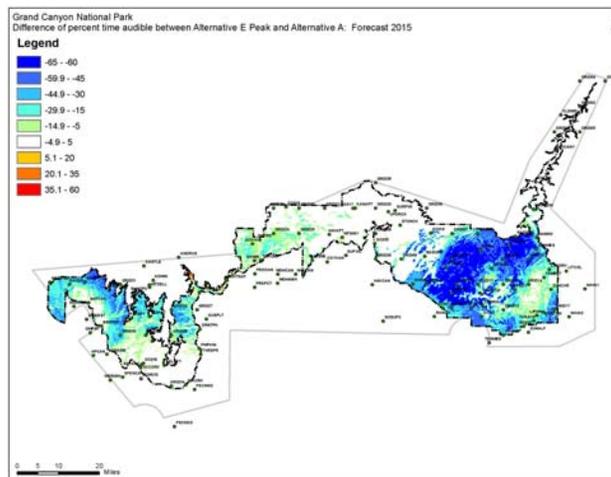
Alternative B - A



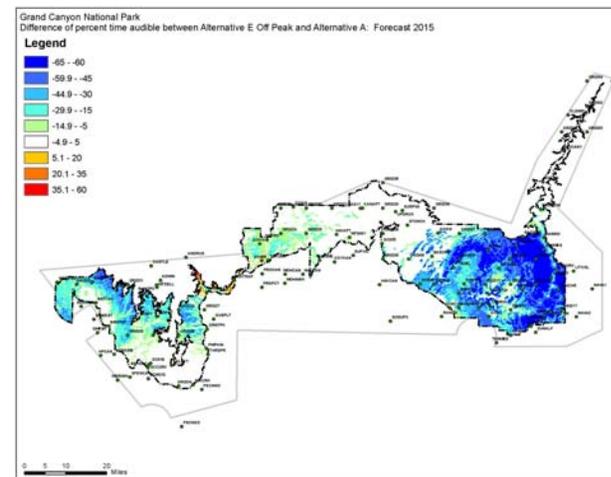
Alternative C - A



Alternative D - A

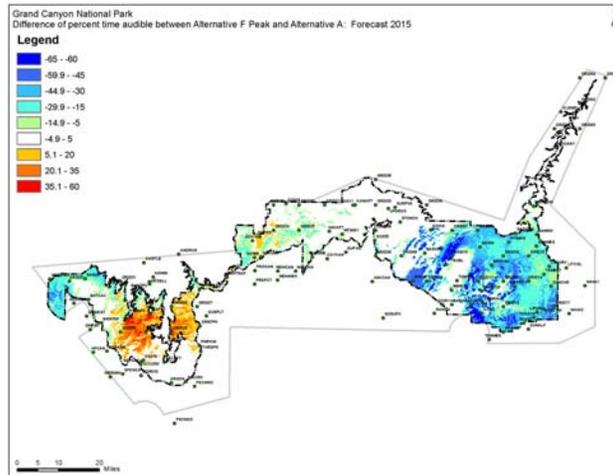


Alternative E - A

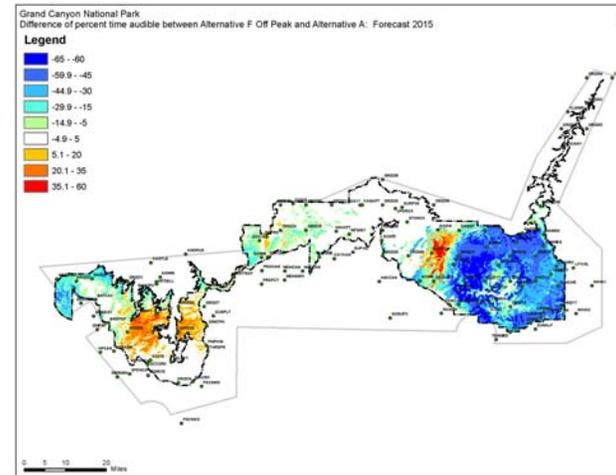


Alternative E (off peak) - A

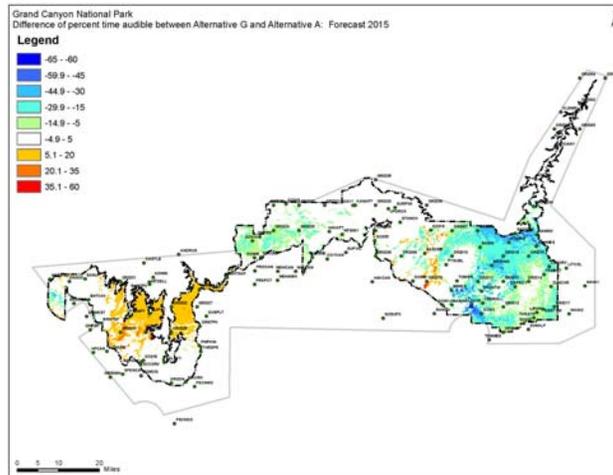
Difference Contours from Alternative A (10-Yr Forecast): Time Audible



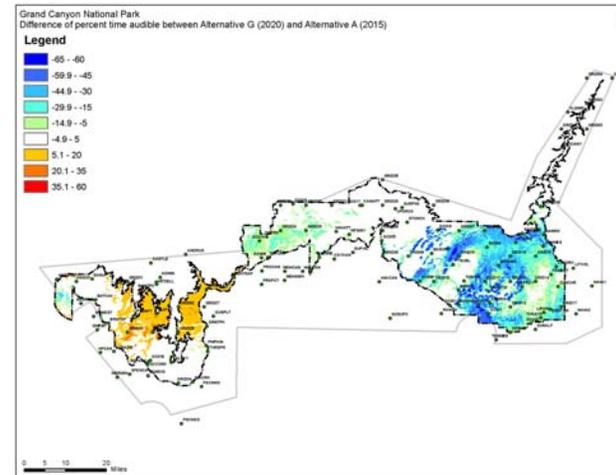
Alternative F - A



Alternative F (off peak) - A

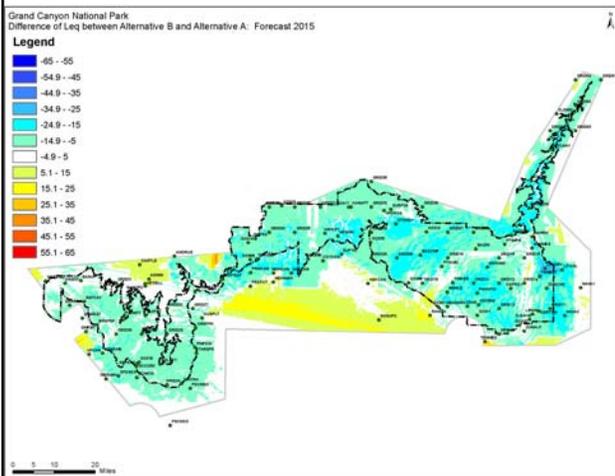


Alternative G - A

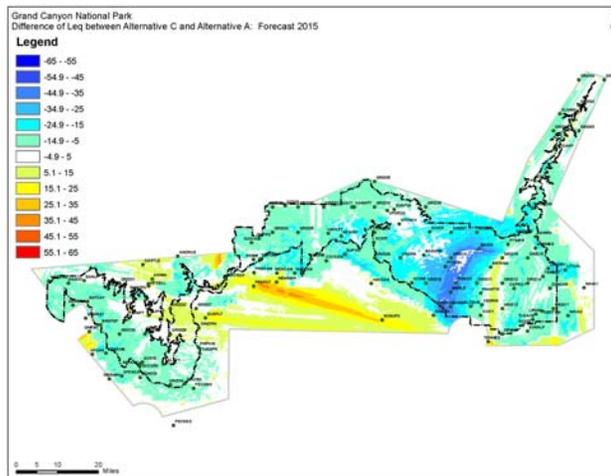


Alternative G (15-Yr) - A (10-Yr)

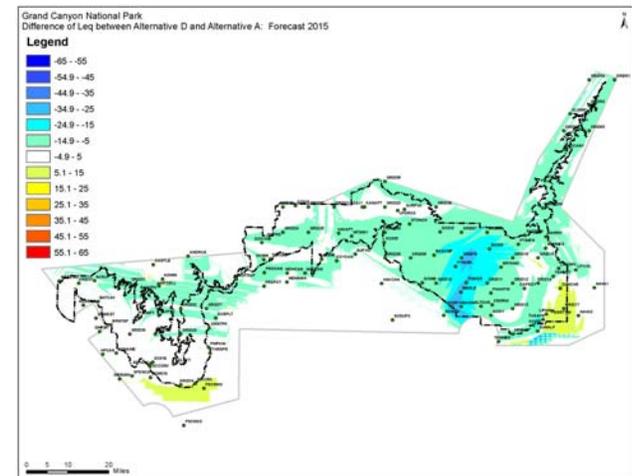
Difference Contours from Alternative A (10-Yr Forecast): L_{Aeq12h}



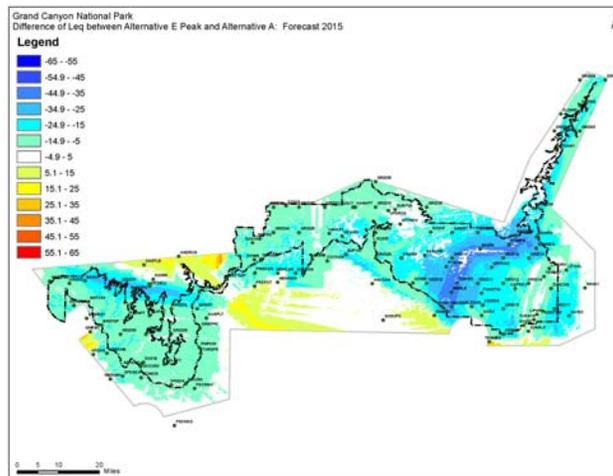
Alternative B - A



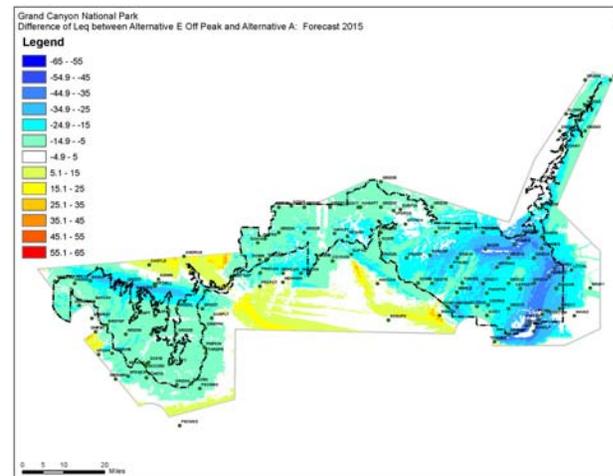
Alternative C - A



Alternative D - A

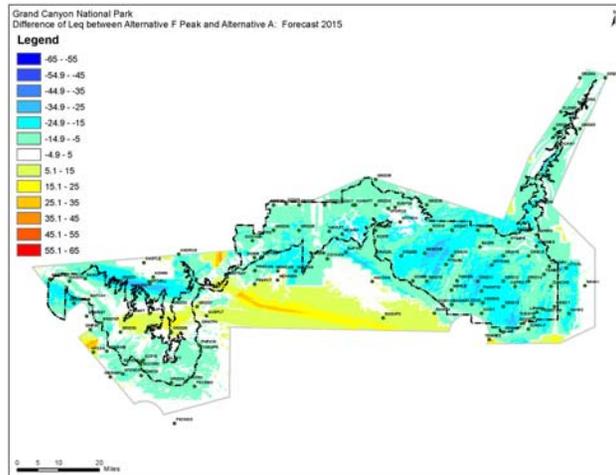


Alternative E - A

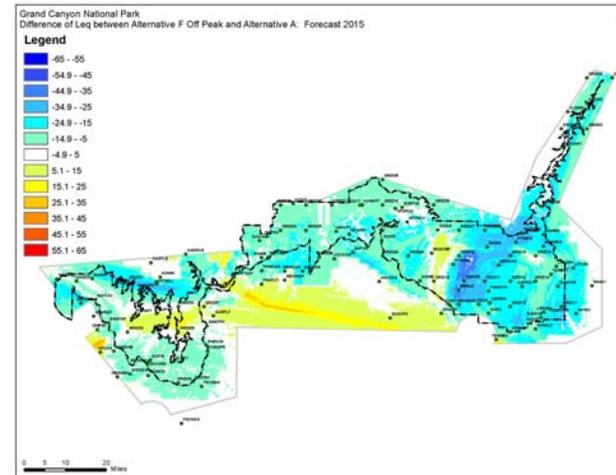


Alternative E (off peak) - A

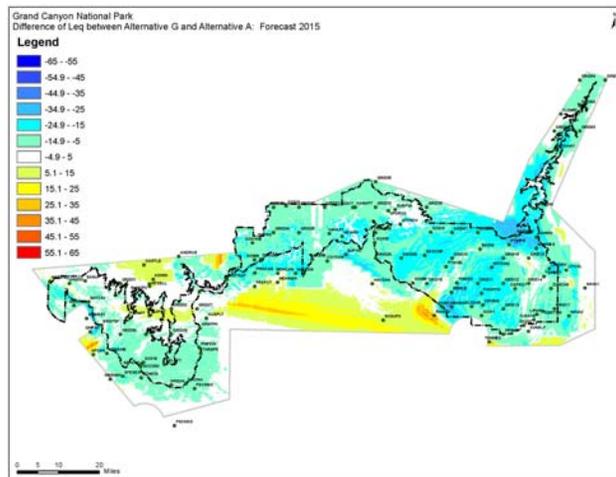
Difference Contours from Alternative A (10-Yr Forecast): L_{Aeq12h}



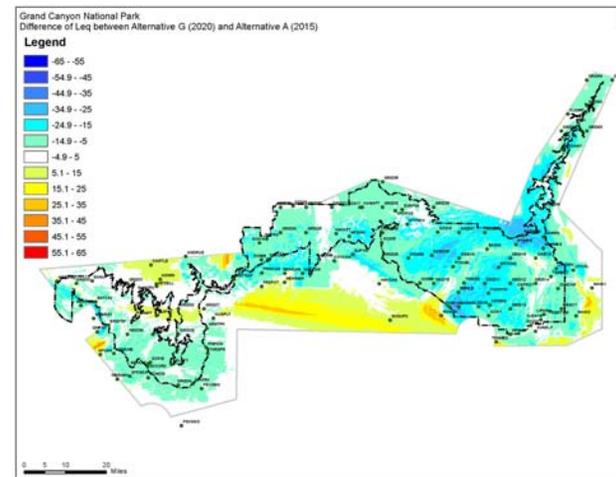
Alternative F - A



Alternative F (off peak) - A



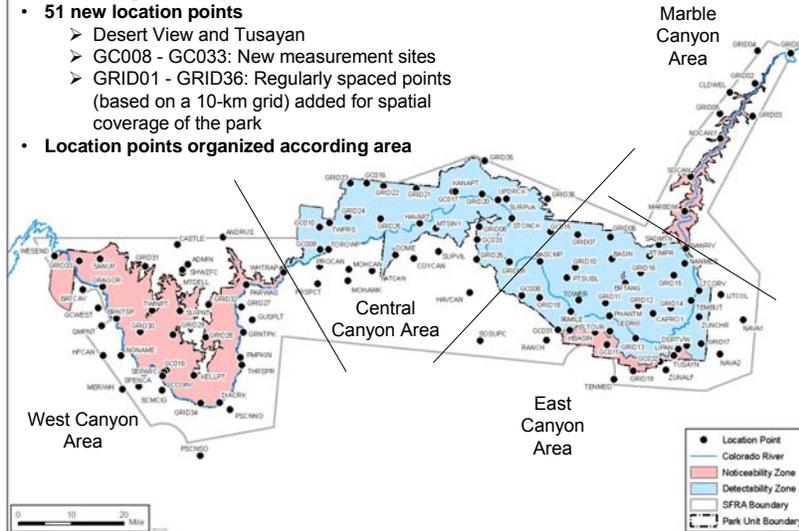
Alternative G - A



Alternative G (15-Yr) - A (10-Yr)

Location Points Analysis

- 76 existing location points
- 51 new location points
 - Desert View and Tusayan
 - GC008 - GC033: New measurement sites
 - GRID01 - GRID36: Regularly spaced points (based on a 10-km grid) added for spatial coverage of the park
- Location points organized according area



Time Audible Results Summary for Location Points for Base Year

Location Points		% Time Audible (12-Hour Day)								
		All Aircraft below 18,000 feet MSL and Within the SFRA								
		A	B	C	D	E	E (Off Peak)	F	F (Off Peak)	G
All 127 Location Points*	Max	99.8	99.8	94.5	92.7	92.2	95.6	99.8	94.9	99.8
	Median	8.9	4.2	6.7	4.8	1.5	1.5	4.2	5.5	9.3
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West Canyon Area	Max	93.0	88.9	94.5	92.7	92.2	95.6	89.5	87.8	92.9
	Median	16.3	17.1	19.9	13.5	4.7	4.8	16.5	16.8	28.8
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Central Canyon Area	Max	80.4	78.1	60.5	73.9	79.9	25.2	83.9	38.1	68.3
	Median	1.4	0.9	1.5	1.1	1.0	0.9	1.1	1.3	1.1
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
East Canyon Area	Max	99.8	99.8	78.4	73.7	87.9	92.9	99.8	94.9	99.8
	Median	58.5	52.7	38.4	10.7	11.8	1.3	59.6	21.9	55.4
	Min	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.1
Marble Canyon Area	Max	55.0	48.8	46.5	53.0	67.1	0.8	55.0	31.7	56.7
	Median	1.9	0.3	2.1	0.3	0.3	0.3	1.9	0.3	1.2
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

* Note: Peach Spring Canyon South (PSCNSO) was not modeled for Time Audible, as it is located too far outside park boundaries for ambient data coverage.



L_{Aeq} Results Summary for Location Points for Base Year

Location Points		L _{Aeq} (12-Hour Day)								
		All Aircraft below 18,000 feet MSL and Within the SFRA								
		A	B	C	D	E	E (Off Peak)	F	F (Off Peak)	G
All 127 Location Points*	Max	49.2	49.2	47.5	51.0	52.7	47.7	49.2	49.2	52.9
	Median	16.6	13.6	14.7	14.0	11.2	9.3	16.5	13.2	16.1
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West Canyon Area	Max	47.3	48.0	47.5	47.3	47.2	47.7	47.5	46.0	48.6
	Median	21.7	21.7	27.8	21.9	18.2	19.0	17.3	17.2	24.0
	Min	0.0	0.0	0.0	6.9	0.0	3.7	0.0	0.0	0.0
Central Canyon Area	Max	33.0	34.5	46.5	44.1	21.1	25.7	33.0	37.7	40.0
	Median	9.8	8.5	8.8	7.7	7.1	7.6	7.9	7.8	8.6
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
East Canyon Area	Max	49.2	49.2	45.9	51.0	52.7	45.9	49.2	49.2	52.9
	Median	28.3	25.9	20.3	20.1	12.9	10.3	28.3	21.0	25.5
	Min	6.9	3.3	0.0	0.0	0.4	0.0	7.3	2.9	7.1
Marble Canyon Area	Max	28.3	23.4	28.7	36.5	29.5	12.9	28.3	22.9	28.1
	Median	14.6	1.3	14.4	0.0	0.0	0.0	14.6	0.0	13.0
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Time Audible Results Summary for Location Points for 10-, 15- Year

Location Points		% Time Audible (12-Hour Day)									
		All Aircraft below 18,000 feet MSL and Within the SFRA									
		A	B	C	D	E	E (Off Peak)	F	F (Off Peak)	G	G (15-Year)
All 127 Location Points*	Max	99.8	99.8	86.8	94.9	83.6	87.5	97.9	83.1	99.7	98.9
	Median	10.0	5.5	7.4	5.5	1.3	1.1	3.0	2.3	7.0	5.5
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West Canyon Area	Max	95.2	92.7	86.8	94.9	83.6	87.5	84.9	81.2	95.0	94.2
	Median	18.6	19.6	22.6	15.2	3.8	3.8	13.8	12.6	30.6	30.5
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Central Canyon Area	Max	83.8	85.1	50.9	77.5	22.7	26.7	41.8	21.0	55.2	48.9
	Median	1.5	1.1	1.3	1.2	0.8	0.7	0.9	1.3	0.9	1.5
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
East Canyon Area	Max	99.8	99.8	70.1	75.8	66.1	78.4	97.9	83.1	99.7	98.9
	Median	60.1	55.4	20.6	12.2	7.5	1.3	20.0	7.6	47.4	30.4
	Min	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Marble Canyon Area	Max	58.9	52.7	38.8	56.7	45.9	1.0	32.3	14.1	54.6	52.4
	Median	2.3	0.4	1.9	0.4	0.3	0.3	2.1	0.3	1.3	1.4
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

* Note: Peach Spring Canyon South (PSCNSO) was not modeled for Time Audible, as it is located too far outside park boundaries for ambient data coverage.



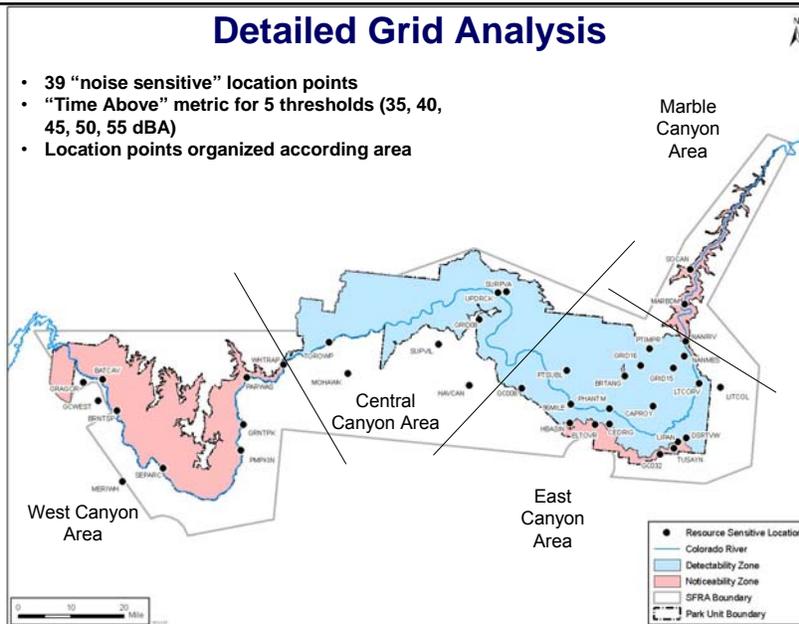
L_{Aeq} Results Summary for Location Points for 10-, 15-Year

Location Points		L _{Aeq} (12-Hour Day)									
		All Aircraft below 18,000 feet MSL and Within the SFRA									
		A	B	C	D	E	E (Off Peak)	F	F (Off Peak)	G	G (15-Year)
All 127 Location Points*	Max	49.4	49.4	47.7	51.3	51.0	46.3	46.3	47.1	52.1	50.9
	Median	17.7	15.2	15.9	15.3	10.0	9.5	15.5	12.5	14.9	14.9
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West Canyon Area	Max	47.8	47.7	47.7	47.8	46.3	46.3	46.0	45.3	48.1	47.5
	Median	22.6	22.7	27.0	22.8	19.0	19.7	18.2	18.0	24.3	24.5
	Min	0.0	0.0	0.0	7.4	0.0	1.2	0.0	0.0	0.0	0.0
Central Canyon Area	Max	33.5	34.9	44.7	44.6	18.0	24.0	24.4	35.1	37.7	37.5
	Median	10.8	9.4	9.4	8.6	7.5	7.9	9.1	8.6	8.6	9.4
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
East Canyon Area	Max	49.4	49.4	46.2	51.3	51.0	43.7	46.3	47.1	52.1	50.9
	Median	28.7	26.4	21.5	21.3	12.1	9.6	21.3	17.4	23.0	20.7
	Min	7.2	3.8	0.0	0.2	0.7	0.0	2.4	0.0	4.5	2.9
Marble Canyon Area	Max	28.7	23.8	27.5	36.7	22.9	12.9	24.2	16.7	25.5	24.8
	Median	16.1	14.0	13.8	10.7	0.0	0.0	15.2	0.0	13.5	13.7
	Min	2.2	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Detailed Grid Analysis

- 39 “noise sensitive” location points
- “Time Above” metric for 5 thresholds (35, 40, 45, 50, 55 dBA)
- Location points organized according area



Time Above Results Summary for Location Points for Base Year

Location Points		Average % Time Above Threshold (12-Hour Day)								
		All Aircraft below 18,000 feet MSL and Within the SFRA								
		A	B	C	D	E	E (Off Peak)	F	F (Off Peak)	G
All 39 Location Points*	Time Above 35 dBA	11.8	8.8	8.3	5.3	6.4	4.6	11.1	4.5	8.1
	Time Above 40 dBA	6.7	4.4	4.5	3.1	3.7	2.7	6.4	2.6	4.4
	Time Above 45 dBA	3.4	2.1	2.1	1.7	2.0	1.5	3.2	1.4	2.2
	Time Above 50 dBA	1.1	0.8	1.0	0.8	0.9	0.7	1.0	0.5	1.0
	Time Above 55 dBA	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.1	0.2
West Canyon Area	Time Above 35 dBA	13.9	11.3	17.0	13.2	12.9	15.5	11.3	11.0	13.4
	Time Above 40 dBA	8.3	6.7	10.0	8.1	7.9	9.6	7.1	6.9	8.6
	Time Above 45 dBA	4.7	3.9	4.7	4.6	4.5	5.4	4.2	3.9	5.2
	Time Above 50 dBA	2.4	2.1	2.4	2.4	2.3	2.8	2.1	1.8	2.8
	Time Above 55 dBA	0.7	0.9	0.7	0.7	0.7	0.8	0.8	0.5	0.8
Central Canyon Area	Time Above 35 dBA	1.7	3.0	3.5	0.9	0.0	0.1	1.7	1.9	4.1
	Time Above 40 dBA	0.6	1.3	2.1	0.5	0.0	0.0	0.6	1.2	2.6
	Time Above 45 dBA	0.2	0.3	1.3	0.3	0.0	0.0	0.2	0.6	1.3
	Time Above 50 dBA	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.2	0.2
	Time Above 55 dBA	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
East Canyon Area	Time Above 35 dBA	16.1	10.7	6.5	3.6	6.5	1.4	16.1	2.6	7.8
	Time Above 40 dBA	9.1	4.9	3.2	1.9	3.5	0.5	9.1	1.3	3.4
	Time Above 45 dBA	4.3	2.1	1.3	1.0	1.7	0.2	4.3	0.5	1.2
	Time Above 50 dBA	1.0	0.6	0.4	0.3	0.7	0.1	1.0	0.1	0.5
	Time Above 55 dBA	0.0	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0
Marble Canyon Area	Time Above 35 dBA	0.4	0.0	0.5	0.0	0.0	0.0	0.4	0.0	0.0
	Time Above 40 dBA	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.0
	Time Above 45 dBA	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	Time Above 50 dBA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Time Above 55 dBA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Time Above Results Summary for Location Points for 10-, 15- Year

Location Points		Average % Time Above Threshold (12-Hour Day)									
		All Aircraft below 18,000 feet MSL and Within the SFRA									
		A	B	C	D	E	E (Off Peak)	F	F (Off Peak)	G	G (15-Year)
All 39 Location Points*	Time Above 35 dBA	12.8	9.7	7.3	5.9	5.3	3.7	7.8	3.7	7.2	6.5
	Time Above 40 dBA	7.3	4.8	4.0	3.5	2.8	2.0	4.0	2.1	3.9	3.7
	Time Above 45 dBA	3.7	2.3	2.1	1.9	1.4	1.0	1.7	1.0	2.0	1.9
	Time Above 50 dBA	1.2	0.9	0.9	0.9	0.6	0.3	0.4	0.4	0.9	0.8
	Time Above 55 dBA	0.2	0.3	0.2	0.3	0.2	0.1	0.1	0.1	0.2	0.2
West Canyon Area	Time Above 35 dBA	15.3	13.3	15.2	14.5	11.3	13.1	11.5	10.8	15.0	14.7
	Time Above 40 dBA	9.3	7.6	9.0	9.0	6.3	7.3	7.1	6.6	9.8	9.4
	Time Above 45 dBA	5.3	4.5	3.4	5.2	3.3	3.7	3.9	3.5	5.9	5.5
	Time Above 50 dBA	2.7	2.3	1.4	2.7	1.3	1.3	1.5	1.3	2.9	2.6
	Time Above 55 dBA	0.8	0.9	0.5	0.8	0.5	0.5	0.5	0.4	0.7	0.7
Central Canyon Area	Time Above 35 dBA	2.0	3.4	4.2	1.0	0.0	0.1	0.5	1.4	3.2	3.5
	Time Above 40 dBA	0.7	1.4	2.3	0.6	0.0	0.0	0.0	0.8	1.7	1.7
	Time Above 45 dBA	0.3	0.4	2.3	0.3	0.0	0.0	0.0	0.3	0.5	0.3
	Time Above 50 dBA	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.1	0.1	0.1
	Time Above 55 dBA	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
East Canyon Area	Time Above 35 dBA	17.3	11.5	5.1	4.0	5.0	0.6	9.7	1.4	5.5	4.1
	Time Above 40 dBA	9.8	5.4	2.5	2.2	2.4	0.4	4.5	0.6	2.2	1.9
	Time Above 45 dBA	4.6	2.2	1.6	1.1	1.0	0.1	1.5	0.1	0.9	0.9
	Time Above 50 dBA	1.0	0.6	0.4	0.3	0.5	0.0	0.1	0.0	0.3	0.3
	Time Above 55 dBA	0.1	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.1	0.1
Marble Canyon Area	Time Above 35 dBA	0.4	0.0	0.5	0.0	0.0	0.0	0.4	0.0	0.0	0.0
	Time Above 40 dBA	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0
	Time Above 45 dBA	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Time Above 50 dBA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Time Above 55 dBA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

