

## AGIC SPCS2022 REPORT

March 10 2021

By Brian Fisher, RLS

Attached are files showing what has been completed to date on the SPCS2022 project. We are at 98% completion for the refinement of the number of zones for Arizona. There are a total of 67 zones (not including Navajo Nation, as that is above the layering for AZ). There is a single state-wide zone, fifty eight (58) complete coverage zones and eight (8) layer-two zones.

We are at about 90% complete for the final zone parameters. Attached is a spreadsheet showing all the zone parameters.

We are at about 70% completed for assigning the final Northing and Easting values for the zones. A basic scheme has been devised but the final values is still being determined. First, not all zones are centered on their own CM and Latitudes, so some offsetting is required to 'fit' them in their assigned "box". Second, there are two possible exceptions that will be requested from NGS. The two rules are listed below:

Procedures for Design and Modification of the State Plane Coordinate System of 2022

5. Zone numbers, names, and abbreviations.

f. Specifications for projection defining parameters

v. Projection grid origins (false northings and eastings) are defined in meters using whole numbers evenly divisible by 1000 meters, selected such that SPCS2022 coordinates (northings and eastings) are positive at all locations within a zone.

vi. Parameters specific to each projection type:

- TM. False northing is exactly zero.

First is a request that 5.f.v be restated from 1000 meters to 381 meters. The reason is that increments of 381 meters equal exactly increments of 1250 ft. This would result in "clean" definitions in both meters and feet.

Second is a request that 5.vi.2<sup>nd</sup> bullet be revised to either have False northing be zero, or also include latitude be zero and northing be an increment of 381 meters positive integers.

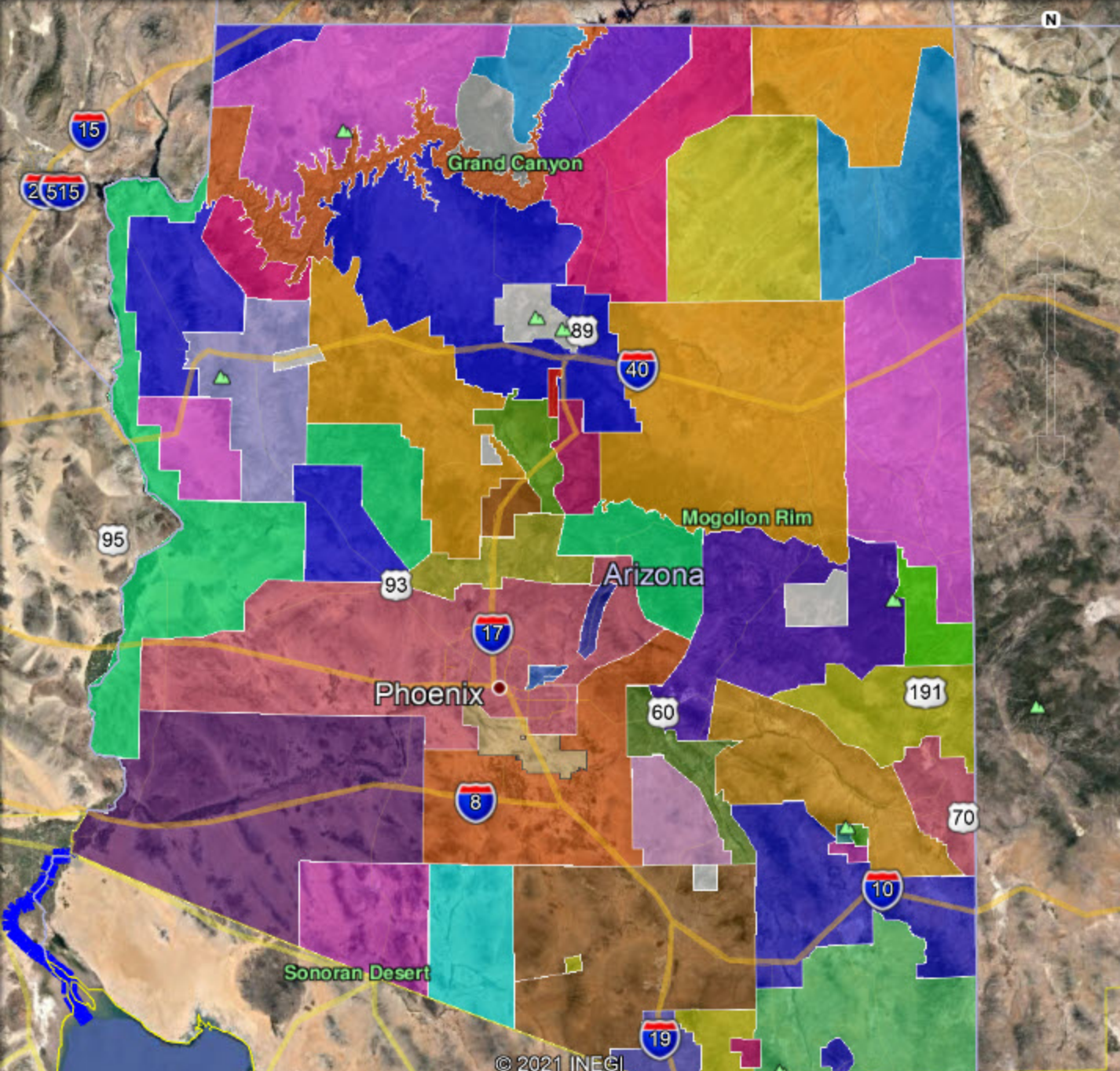
Both of these requests will allow the proposed "grid boxes" as shown in the attached. Neither of these needs to be finalized by the deadline on March 31, 2021, and both may be sorted out over the next year while the projects is being review. We just need to submit something (recommending northing as shown on exhibit) and request exception. Worst case scenario, is both are turned down and we will shift our "grid box" south 10,000,000 feet (and possibly also west 10,000,000 feet) to comply with the procedures as written.

Tasks remaining include creation of maps, projection test files for survey software, reports of highway distortion and final zone names, abbreviations and numbers. All of these can be completed in the next several months AFTER we submit our 90% complete design and application by March 31 2021.

Count	Layer	Name	Proj type	Lat_O	CM	Ko	Skew axis azimuth
1	0	AZ_all	TM	0	-112.05	0.99985	-
2	1	AZ_191N	LCC1	33.9	-109.35	1.000394	-
3	1	AZ_191S	LCC1	33	-109.55	1.00029	-
4	1	AZ_266	OM	32.6	-109.85	1.00023	-80
5	1	AZ_366A	OM	42	-109.8	0.992555	-50
6	1	AZ_366B	OM	32	-109.85	1.000395	42
7	1	AZ_386	LCC1	38	-111.6	0.9949	-
8	1	AZ_87	OM	33.25	-111.5	1.000095	-80
9	1	AZ_AJO	TM	0.4	-113.1667	1.000055	-
10	1	AZ_BLCN	OM	34.15	-112.3	1.000123	83
11	1	AZ_BSBE	LCC1	31.466667	-109.9	1.00025	-
12	1	AZ_CASA	LCC1	32.95	-111.7	1.000055	-
13	1	AZ_CLIF	LCC1	33.05	-109.25	1.000175	-
14	1	AZ_CNLO	LCC1	31.55	-110.55	1.000246	-
15	1	AZ_COCO	OM	35.6	-112	1.00029	-85
16	1	AZ_COLO	OM	33.5	-114.4	1.000019	6
17	1	AZ_CONG	LCC1	34.2	-113.05	1.00012	-
18	1	AZ_CORD	LCC2	34.25	-112	1.00018	-
19	1	AZ_CVCS	OM	34.3	-111.85	1.00015	-65
20	1	AZ_DOLS	OM	35.15	-114.15	1.00013	-20
21	1	AZ_DOUG	LCC1	31.55	-109.75	1.00019	-
22	1	AZ_FRED	LCC1	36.95	-113	1.000213	-
23	1	AZ_GC00	OM	36.3	-112.45	1.000089	76
24	1	AZ_GLBE	TM	0	-111.2	1.00016	-
25	1	AZ_GNDO	OM	35.85	-109.4	1.000295	-38
26	1	AZ_GRIC	OM	33.3	-111.9	1.00005	-85
27	1	AZ_HOLB	OM	35.05	-110.6	1.000245	-68
28	1	AZ_HOPI	LCC1	35.8	-110.5	1.00025	-
29	1	AZ_HSRK	OM	29.25	-111.9	0.999974	10
30	1	AZ_KEAR	LCC1	33.15	-110.85	1.00009	-
31	1	AZ_KING	LCC1	34.6	-113.75	1.00011	-
32	1	AZ_KYNA	LCC1	36.75	-109.75	1.00025	-
33	1	AZ_LEMN	LCC1	30.5	-110.75	0.9998	-
34	1	AZ_LITL	LCC1	36.9	-113.85	1.000105	-
35	1	AZ_MING	OM	34.7	-112.15	1.00031	42
36	1	AZ_NOGA	LCC1	31.6	-111	1.000162	-
37	1	AZ_NRIM	TM	0	-112.2	1.000377	-
38	1	AZ_OKCN	LCC1	34	-111.7	1.000119	-
39	1	AZ_ORAK	LCC1	33	-110.9	1.00015	-
40	1	AZ_PAGE	OM	37.65	-111.35	1.000204	40
41	1	AZ_PEAS	TM	0	-113.45	1.000216	-
42	1	AZ_PHX	LCC1	33.25	-112.65	1.000045	-
43	1	AZ_PRES	OM	34.7	-112.35	1.000235	-22

44	1	AZ_PSYN	LCC1	34.25	-111.25	1.00024	-
45	1	AZ_SAFF	LCC1	33.1	-109.95	1.00013	-
46	1	AZ_SNOW	LCC1	36.25	-111.85	1.00026	-
47	1	AZ_SNTR	TM	0.4	-112.1667	1.00009	-
48	1	AZ_SONO	LCC1	31.6	-110.7	1.00021	-
49	1	AZ_SRPM	LCC1	33	-111.75	1.000017	-
50	1	AZ_STJN	LCC1	34.85	-109.45	1.00025	-
51	1	AZ_TCSN	OM	32.25	-111.4	1.00011	45
52	1	AZ_TUBA	TM	0	-111.4667	1.000237	-
53	1	AZ_VRIM	OM	30	-111.65	1.0000389	-15
54	1	AZ_WILX	LCC1	32.25	-109.75	1.00018	-
55	1	AZ_WLCR	LCC1	33.5	-113.4	0.999795	-
56	1	AZ_WTRV	LCC1	32.85	-110.05	1.00009	-
57	1	AZ_YARN	TM	0	-112.7	1.000209	-
58	1	AZ_YUCA	OM	34.7	-114.1	1.000086	-57
59	1	AZ_YUGB	OM	32.8	-113.75	1.000014	81
60	2	AZ_CAP	OM	33.5	-112.55	1.000057	-63
61	2	AZ_CR01	OM	35.25	-114.45	1.00002	-9
62	2	AZ_CR02	OM	32.95	-114.65	1.000004	14
63	2	AZ_FLAG	OM	35.2	-111.7	1.00033	30
64	2	AZ_GC01	OM	36.2	-111.7	1.000124	42
65	2	AZ_GC02	OM	35.7	-112.2	1.000095	-27
66	2	AZ_GC03	OM	36.85	-113	1.000066	19
67	2	AZ_GC04	OM	35.95	-114.05	1.000049	85
68							

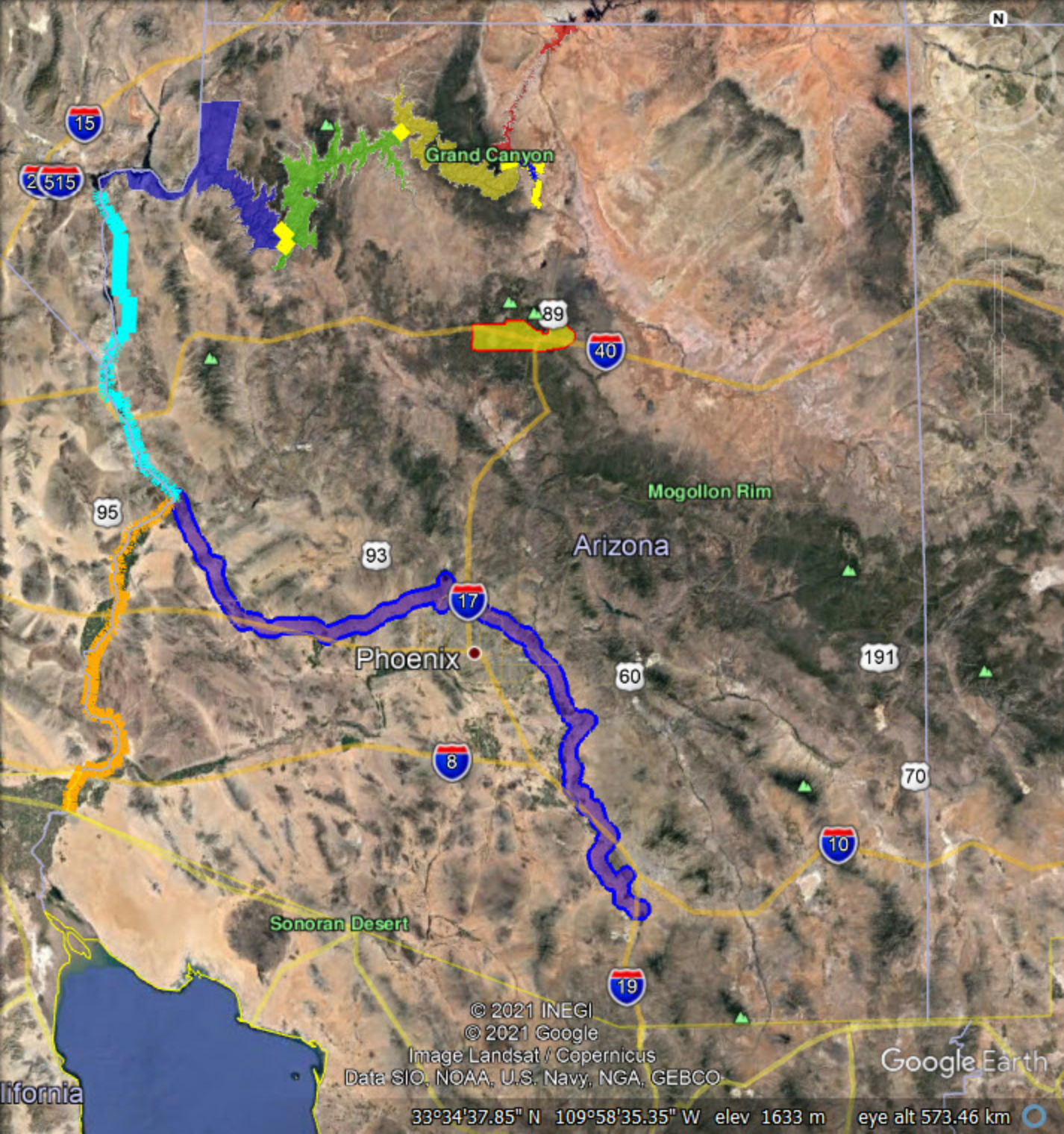
LITL	FRED	WLCR	NRIM	HSRK	GC00(L1)	NNCS	6,096,000
.	.	+	.	.	.	.	5,943,600 <sup>9</sup>
DOLS	PEAS	+	GC02(L2)	GC02(L2)	GC01(L2)	.	5,791,200
.	.	+	.	.	.	.	5,638,800 <sup>8</sup>
YUCA	KING	.	GC04(L2)	GC03(L2)	PAGE	TUBA	5,486,400
.	.	.	.	.	.	KYNA	5,334,000 <sup>7</sup>
COLO	CR01	CR02	MING	OKCN	COCO	FLAG	5,181,600
.	.	.	.	.	.	SNOW	5,029,200 <sup>6</sup>
.	.	.	CONG	YARN	PRES	CVCS	4,876,800
.	.	.	.	.	.	VRIM	4,724,400 <sup>5</sup>
YUGB	PHX	BLCN	CORD	PSYN	GLBE	WTRV	4,572,000
.	.	.	.	.	.	191N	4,419,600 <sup>4</sup>
YUCB	PHX	CORD	PSYN	SRPM	87	KEAR	4,267,200
.	.	.	.	.	.	SAFF	4,114,800 <sup>3</sup>
GRIC	AJO	CASA	ORAK	366B	366A	WILX	3,962,400
.	.	.	.	.	.	.	3,810,000 <sup>2</sup>
.	.	.	.	.	.	.	3,657,600
.	.	.	.	.	.	.	3,505,200 <sup>1</sup>
.	.	.	.	.	.	.	3,352,800
.	.	.	.	.	.	.	3,200,400
.	.	.	.	.	.	.	3,048,000
6,248,400 <sup>0</sup>	6,400,800	6,553,200 <sup>1</sup>	6,705,600	6,858,000 <sup>2</sup>	7,010,400	7,162,800 <sup>3</sup>	7,315,200
7,467,600 <sup>4</sup>	7,620,000	7,772,400 <sup>5</sup>	7,924,800	8,077,200 <sup>6</sup>	8,229,600	8,382,000 <sup>7</sup>	8,534,400
8,686,800 <sup>8</sup>	8,839,200	8,991,600 <sup>9</sup>	9,144,000				



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Grand Canyon

Mogollon Rim

Arizona

Phoenix

Sonoran Desert

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Google Earth

33°34'37.85" N 109°58'35.35" W elev 1633 m eye alt 573.46 km