



# Solving Webmap Challenges

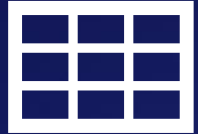
Jim Herries @jherries and Diana Lavery @dianaclavery

**GIS  
INSPIRING  
WHAT'S  
NEXT**



# Imperfect Data, Boring Pop-ups, Getting Attention

# 5 Steps to a Great Web Map



**1. Data Work**



**2. Map it**



**3. Symbolize**



**4. Configure Pop-up**



**5. Label**

# Imperfect Data Challenges We All Run Into

- Null values, -999
- Strings that should be numeric
- Leading zeros in id variable
- Deliberately suppressed data





# Imperfect Data Challenges We All Run Into

- Null values, -999
- Strings that should be numeric
- Leading zeros in id variable
- Deliberately suppressed data
  
- What are you always fixing?



# Data Horror Stories – We All Have Them!

- Replication issues
- Problems with match id



# Data Horror Stories – We All Have Them!

- Replication issues
- Problems with match id
- Big "data janitor" jobs before we can start
- Zip codes
- Bad lat/long
- Highly formatted spreadsheets



# Use a Checklist to Evaluate Tabular Data

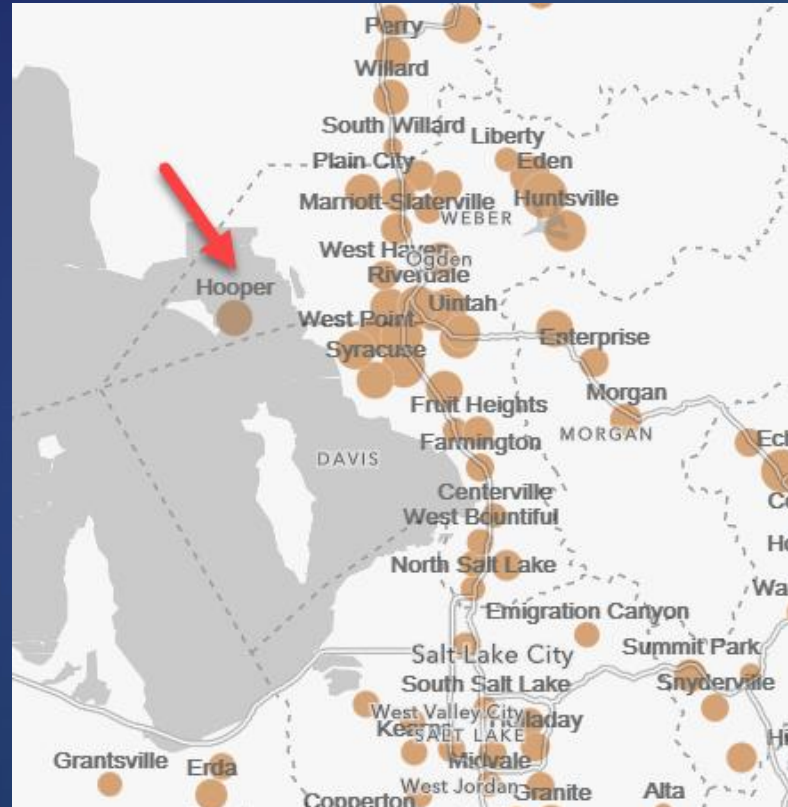
- ❑ Number of records as expected?
  - ❑  $\Sigma$  (all parts) = whole?
  - ❑ Anything out of range?
  - ❑ Do max and min look right?
  - ❑ Sorting is as expected?
- 
- Judgement Calls vs. Hard-and-Fast Rules





# Challenges with Mapping Your Tabular Data

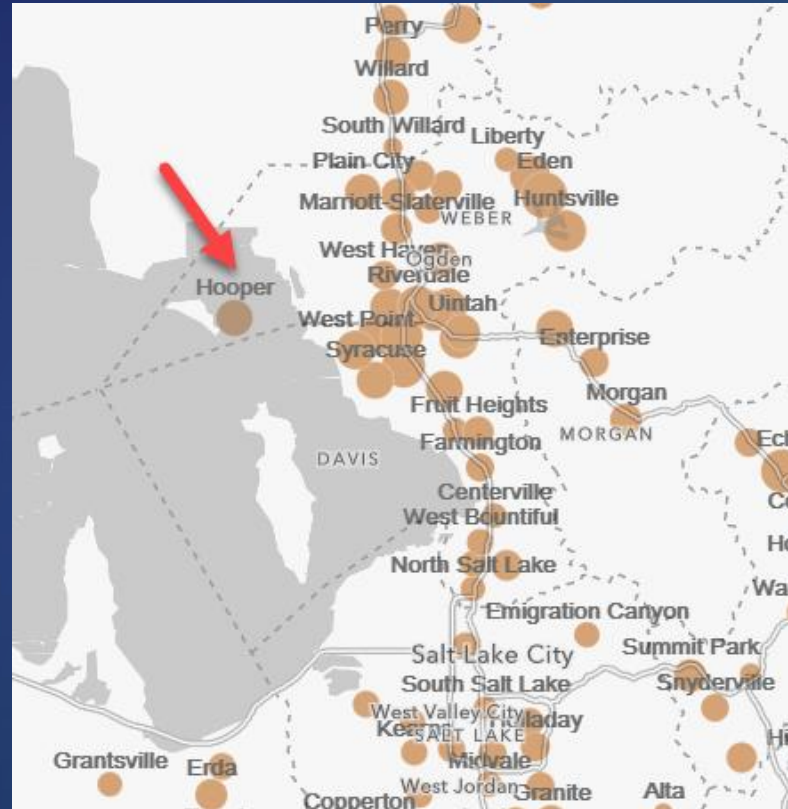
- Geocode or Join errors
- misplaced centroids



# Challenges with Mapping Your Tabular Data

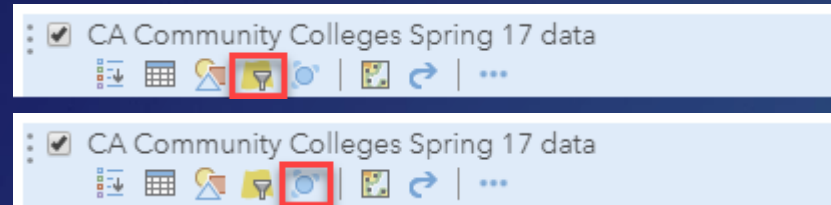
- Geocode or Join errors
- misplaced centroids
- Shortened lat/long, bad precision

	A	B	C
1	latitude	longitude	
2	32.707	-117.163	
3			

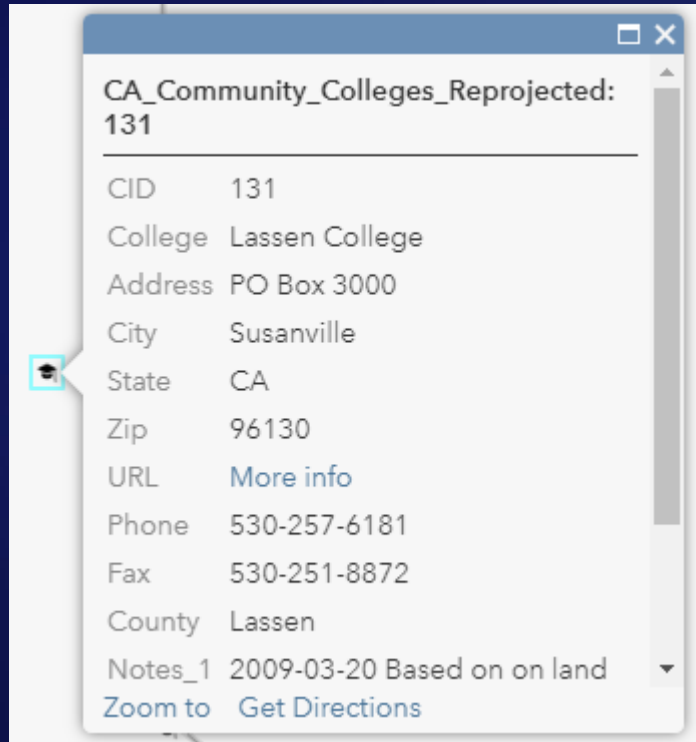


# Time to Symbolize

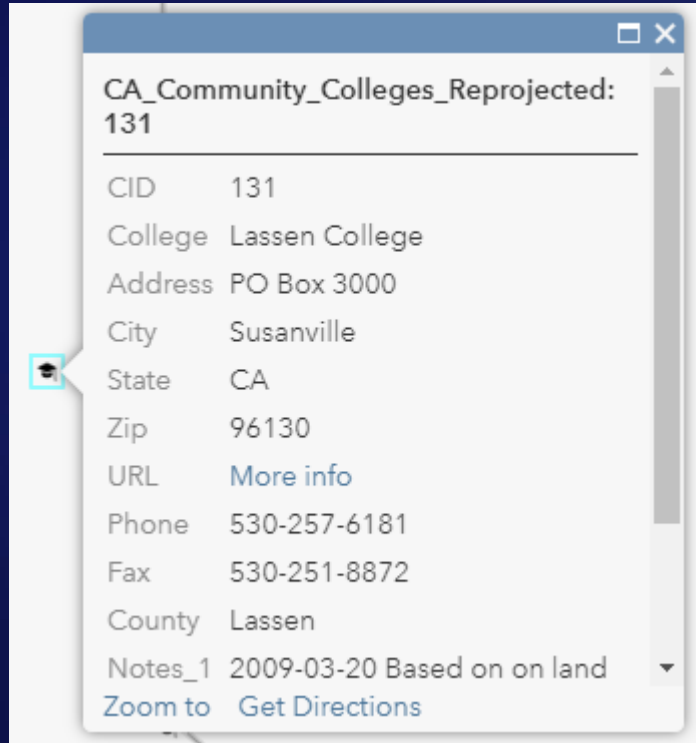
- When to filter?
- When to cluster?
- Need to fix data when symbolizing?



# Fix that Boring Pop-up!



# Fix that Boring Pop-up!



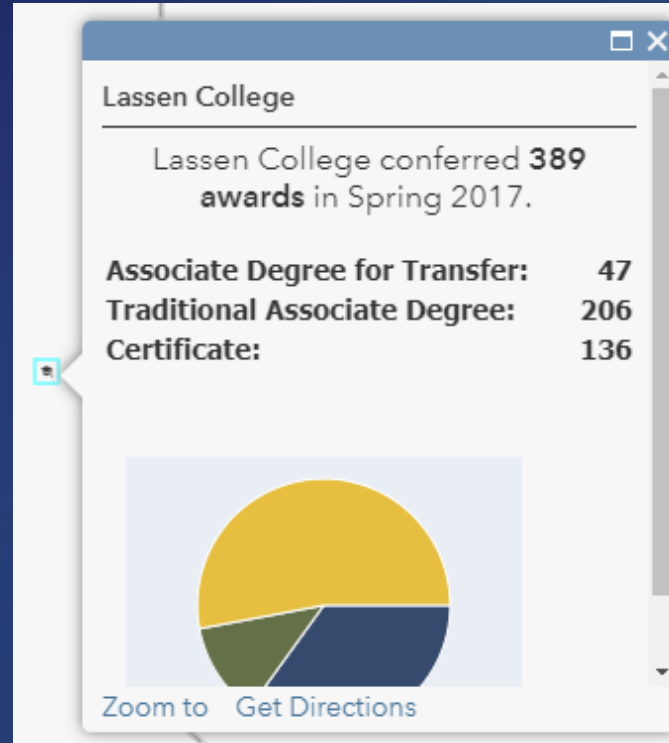
CA\_Community\_Colleges\_Reprojected:  
131

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CID	131
College	Lassen College
Address	PO Box 3000
City	Susanville
State	CA
Zip	96130
URL	<a href="#">More info</a>
Phone	530-257-6181
Fax	530-251-8872
County	Lassen
Notes_1	2009-03-20 Based on on land

Zoom to [Get Directions](#)

vs.




Lassen College

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Lassen College conferred **389 awards** in Spring 2017.

<b>Associate Degree for Transfer:</b>	<b>47</b>
<b>Traditional Associate Degree:</b>	<b>206</b>
<b>Certificate:</b>	<b>136</b>



Zoom to [Get Directions](#)





# Fix that Boring Pop-up!

- Interpret the data by using sentences
- Transform the data on the fly
- Give context (averages, goals)
- Handle exceptions, suppression requirements
- HTML tables
- Charts

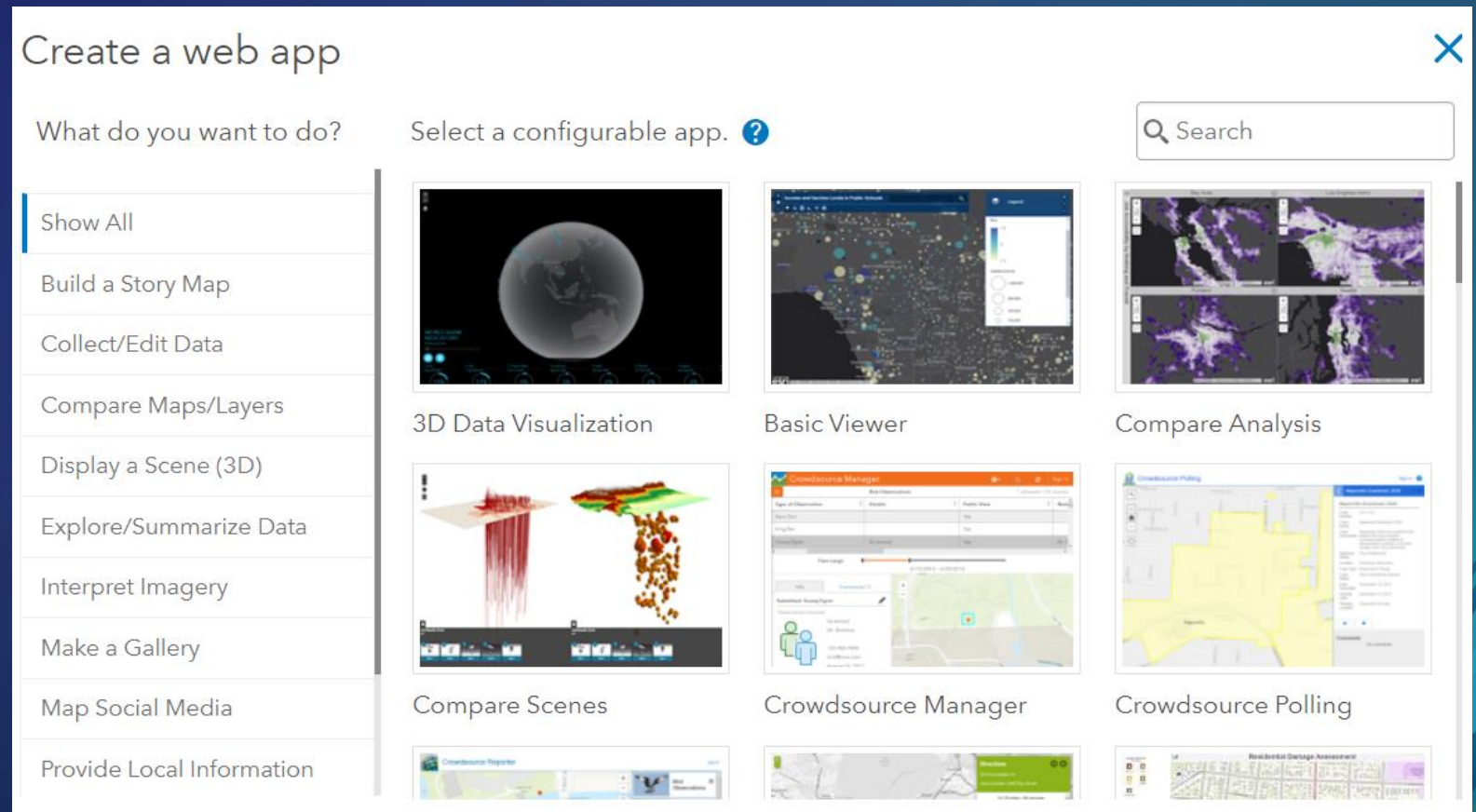
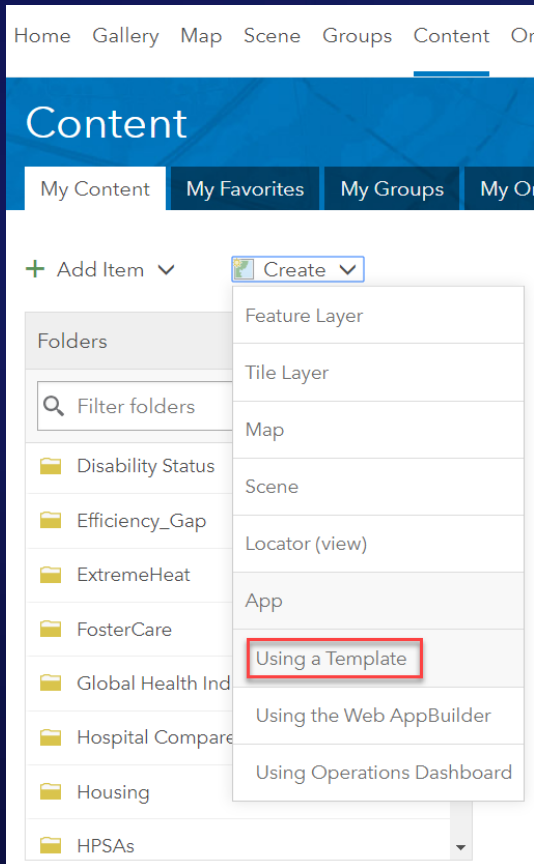


# Labeling


- When is appropriate?
- What options are there to label?
- Scale dependency



# Finally, Showcase Your Web Map in a Configurable App



# Before



California Community Colleges

Feature Layer (hosted) by dianaclavery\_uo

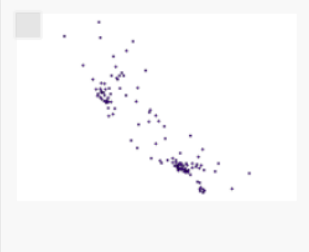
This layer contains 114 community college campuses in California.

Created: Jul 2, 2018 Updated: Jul 4, 2018 View Count: 83

Campus	CID	Enroll_S17_Tot	Enroll_S17_F	Enroll_S17_M	Enroll_S17_Unk	Awards_S17_AA	Awards_S17_AAT	Awards_S17_AS	Awards_S17_AST	Awards_S17_Cert	Awards_S17_Ext														
1	Alameda	341	5597	3040	2471	86	203	62	44	34	392	735	10101	2516	7585	7003	1513	5490	1962	455	1507	1425	222	1203	
2	Allan Hancock	611	14290	7589	6562	139	728	128	348	131	1154	2665	176	25832	5401	20431	19595	3618	15977	9802	2154	7648	8039	1471	6568
3	American River	231	30185	13271	16317	597	1171	263	1008	331	2092	6710	1845	64768	12290	52478	48161	8057	40104	29631	6464	23167	24146	4220	19926
4	Antelope Valley	621	13373	7780	5469	124	836	199	467	231	899	2633	1	32539	2729	29810	23143	1579	21564	8564	621	7943	6516	372	6144
5	Bakersfield	521	21452	11344	9871	237	326	416	364	187	1165	2458	48180	5657	42523	33821	3300	30521	17458	2255	15203	14226	1626	12600	
6	Barstow	911	3013	1925	1055	33	46	274	33	17	370	8778	4935	3843	6461	3380	3081	1983	1228	755	1469	841	628		
7	Berkeley City	345	6509	3458	2931	120	165	183	6	55	457	866	14493	1651	12842	9284	998	8286	2888	92	2796	1798	40	1758	
8	Butte	111	11008	5680	5167	161	618	144	534	159	1402	2870	13	31626	2985	28641	23353	2039	21314	9725	1159	8566	7689	784	6905
9	Cabrillo	411	11985	6340	5550	95	642	142	393	85	363	1625	33986	5756	28230	25207	3997	21210	7996	1512	6484	6447	1071	5376	
10	Canada	371	6233	3784	2301	148	236	122	155	71	289	873	12647	1605	11042	9215	1085	8130	3325	303	3022	2580	225	2355	
11	Canyons	661	20616	9083	11462	71	688	527	707	202	1830	4276	322	47240	8570	38670	36411	5779	30632	15774	1748	14026	13593	1223	12370
12	Cerritos	811	22731	11887	10459	385	1078	295	12	350	1579	3314	49996	8059	41937	34756	5058	29698	16278	4934	11344	11913	3143	8770	
13	Cerro Coso	522	4114	2370	1695	49	244	21	73	38	153	529	9047	4571	4476	6404	2933	3471	4347	2103	2244	3230	1327	1903	
14	Chabot Hayward	482	13075	6858	6071	146	569	143	125	154	234	1225	30950	6261	24689	21948	4164	17784	10313	2463	7850	7850	1662	6188	
15	Chaffey	921	21143	11989	8646	508	1402	378	373	348	1264	3765	53536	3965	49571	37749	2633	35116	12932	1170	11762	10124	864	9260	
16	Citrus	821	13468	7083	6122	263	1390	425	780	378	1575	4585	37	34578	5576	29002	24310	3299	21011	8005	1520	6485	5952	858	5094
17	Clovis	576	6469	3517	2843	109	45	199	89	143	41	517	15639	1173	14466	11530	875	10655	2593	507	2086	1931	368	1563	
18	Coastline	831	10360	4695	5544	121	1481	43	665	36	603	2828	22057	19086	2971	14708	12285	2423	5893	5133	760	3786	3179	607	
19	Columbia	591	2758	1459	1248	51	77	30	121	17	118	368	5	6468	1092	5376	4896	750	4146	2080	429	1651	1659	282	1377
20	Compton	711	7110	4602	2507	1	310	183	178	671	13766	2140	11626	9276	1262	8014	2687	447	2240	1969	239	1730			
21	Contra Costa	311	6876	4037	2762	77	367	62	125	26	468	1048	14937	2001	12936	10616	1264	9352	4028	224	3804	3144	136	3008	
22	Copper Mountain	971	1879	1146	728	5	88	22	57	37	66	270	3855	747	3108	2877	532	2345	955	179	776	761	129	632	
23	Cosumnes River	232	13091	7036	5775	280	336	126	236	153	342	1193	31654	5113	26541	21316	3228	18088	9593	3544	6049	6780	2330	4450	
24	Crafton Hills	981	5758	3063	2682	13	238	125	238	93	378	1072	14383	1973	12410	10377	1359	9018	2883	331	2552	2278	222	2056	
25	Cuesta	641	10194	5319	4755	120	456	225	218	193	337	1484	55	24265	4401	19864	18206	3122	15004	7477	2142	5335	6008	1560	4448
26	Cuyamaca	21	9131	4908	4113	110	278	33	437	90	208	1046	19027	4861	14166	14294	3369	10925	4675	1863	2812	3633	1376	2257	
27	Cypress	861	14925	8181	6492	252	375	260	261	245	994	2135	37240	5609	31631	27076	3735	23341	16676	3034	13642	12654	2079	10575	
28	Deanza	421	18535	9051	9373	111	1392	208	144	371	634	2749	44813	6515	38298	34508	4839	29669	11681	2412	9269	9040	1699	7341	
29	Desert	931	11222	6373	4849	306	250	122	226	200	1232	128	24833	3569	21264	17809	2243	15566	7435	1518	5917	5463	922	4541	
30	Diablo Valley	312	19535	9783	9540	212	147	501	638	366	1253	2909	4	55502	8208	47294	41808	5713	36095	14557	3599	10958	11339	2552	8787
31	East LA	748	39219	20296	18923	1325	416	171	249	3192	5719	366	80636	6124	74512	60564	4252	56312	33919	2245	31674	29767	1510	28257	
32	El Camino	721	22446	11567	10877	2	1454	349	980	558	3341	54586	5180	49406	37837	3453	34384	11244	1037	10207	8375	726	7649		
33	Evergreen Valley	471	8975	4889	4054	32	204	82	133	198	58	675	19032	2190	16842	13908	1528	12380	3533	567	2966	2664	425	2239	
34	Feather River	121	1666	797	858	11	125	13	41	13	192	5077	1013	4064	4325	788	3537	1957	108	1849	1798	89	1709		
35	Folsom Lake	234	8159	4402	3559	198	549	117	52	144	306	1168	18941	3881	15060	13956	2674	11282	4173	1550	2623	3077	1036	2041	
36	Foothill	422	15144	7858	7110	176	259	342	290	149	844	2127	243	30353	12968	17385	24222	10139	14083	10626	5365	5261	9123	4374	4749
37	Fresno City	571	22241	11441	10447	353	133	333	621	364	428	1970	91	51496	5372	46124	36499	3670	32829	20137	2685	17452	16256	1770	14486
38	Fullerton	862	23443	11866	11143	434	1076	486	180	288	292	2322	60224	6948	53276	41691	3988	37703	20495	3021	17474	14365	1688	12677	
39	Gavilan	441	5898	3279	2567	52	223	70	142	87	587	1109	12867	2436	10431	9304	1576	7728	3328	970	2358	2582	640	1942	



# Before



California Community Colleges

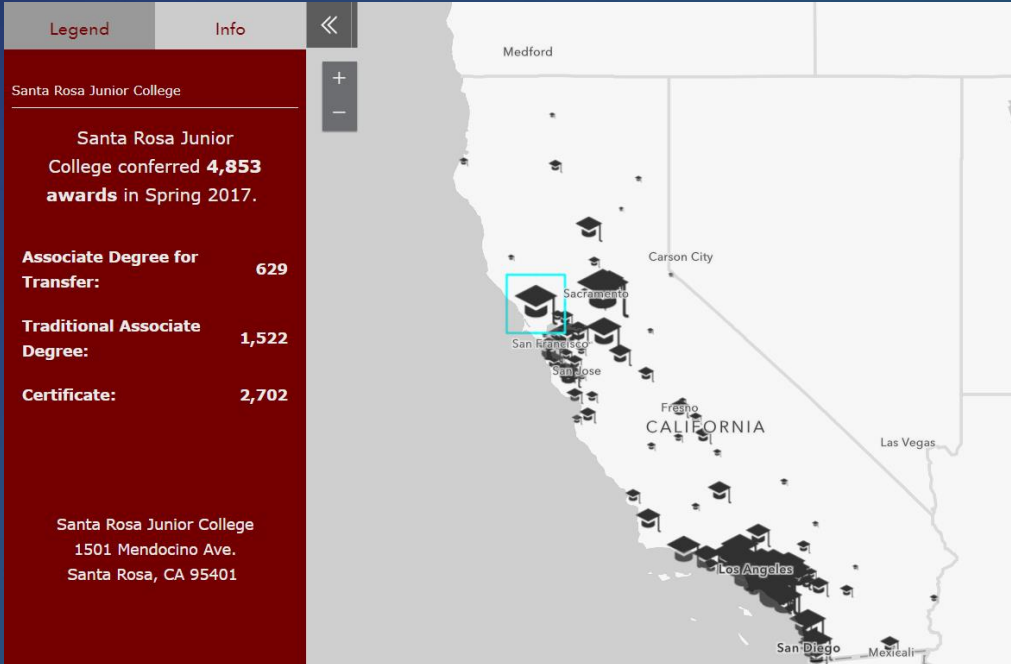
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25	Cuesta	641	10194	5319	4755	120	456	225	218	193	337	1484	55	24265	4481	19864	18206	3122	15004	7477	2142	5335	6008	1560	4448
26	Cuyamaca	21	9131	4908	4113	110	278	33	437	90	208	1046	19027	4861	14166	14294	3369	10925	4675	1863	2812	3633	1376	2257	
27	Cypress	861	14925	8181	6492	252	375	260	245	994	2135	37240	5609	31631	27076	3735	23341	16676	3034	13642	12654	2079	10575		
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29	Desert	931	11222	6373	4849	306	250	122	226	200	1232	128	24833	3569	21264	17809	2243	15566	7435	1518	5917	5463	922	4541	
30	Diablo Valley	312	19535	9783	9540	212	147	501	638	366	1253	2909	4	55502	8208	47294	41808	5713	36095	14557	3599	10958	11339	2552	8787
31	East LA	748	39219	20296	18923	1325	416	171	249	3192	5719	366	80636	6124	74512	60564	4252	56312	33919	2245	31674	29767	1510	28257	
32	El Camino	721	22446	11567	10877	2	1454	349	980	558	3341	54586	5180	49406	37837	3453	34384	11244	1037	10207	8375	726	7649		
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35	Folsom Lake	234	8159	4402	3559	198	549	117	52	144	306	1168	18941	3881	15060	13956	2674	11282	4173	1550	2623	3077	1036	2041	
36	Foothill	422	15144	7858	7110	176	259	342	290	149	844	2127	243	30353	12968	17385	24222	10139	14083	10626	5365	5261	9123	4374	4749
37	Fresno City	571	22241	11441	10447	353	133	333	621	364	428	1970	91	51496	5372	46124	36499	3670	32829	20137	2685	17452	16256	1770	14486
38	Fullerton	862	23443	11866	11143	434	1076	486	180	288	292	2322	60224	6948	53276	41691	3988	37703	20495	3021	17474	14365	1688	12677	
39	Gavilan	441	5898	3279	2567	52	223	70	142	87	587	1109	12867	2436	10431	9304	1576	7728	3328	970	2358	2582	640	1942	

# After



Legend Info

Santa Rosa Junior College

Santa Rosa Junior College conferred **4,853 awards** in Spring 2017.

Associate Degree for Transfer: **629**

Traditional Associate Degree: **1,522**

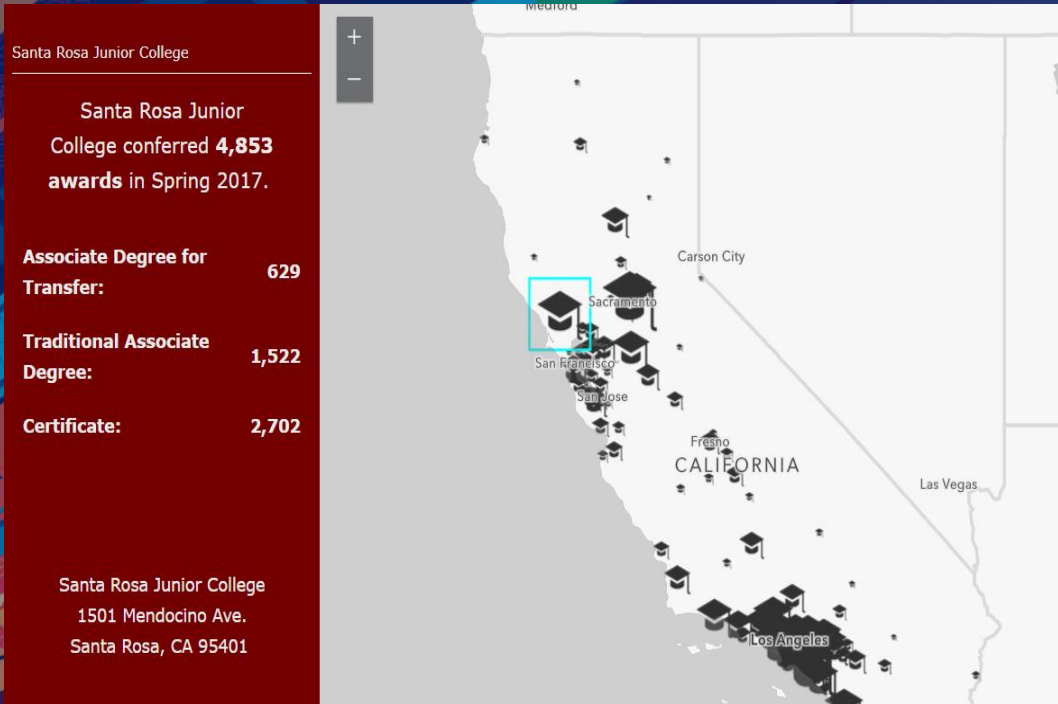
Certificate: **2,702**

Santa Rosa Junior College  
1501 Mendocino Ave.  
Santa Rosa, CA 95401



# California Community Colleges Web App

Diana Lavery



## Blog Posts with More Examples

- [Clustering in ArcGIS Online Enables Data Exploration](#)
- [Suppress Low Counts and Still Create Informative Web Maps with Pop-ups](#)
- [Better Breaks Define Your Map's Purpose](#)
- [Use Arcade Expressions to Map the Land to Improvement Ratios in Your Area](#)
- [Use Arcade Expressions to Map Your Ideas](#)
- [Combining Arcade and HTML for a Real-life Pop-up Display](#)
- [Evaluate and Prep Your Tabular Data in ArcGIS Online](#)

# Questions?



Jim Herries  
jherries@esri.com



Diana Lavery  
dlavery@esri.com

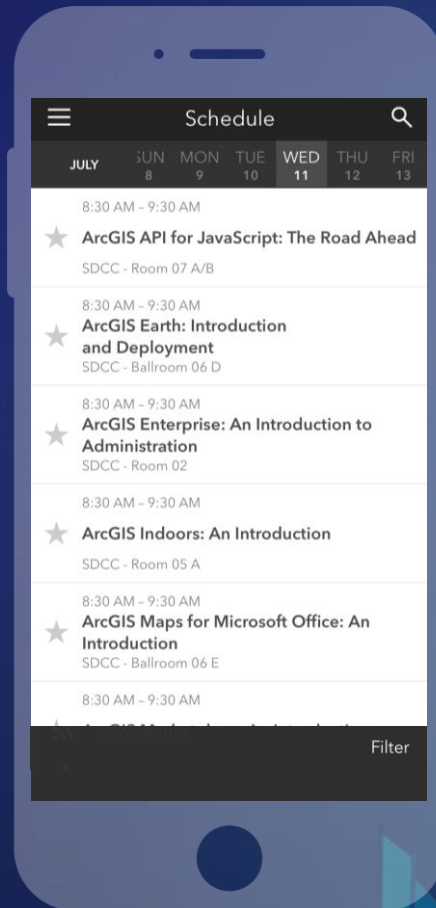


# Please Take Our Survey on the App

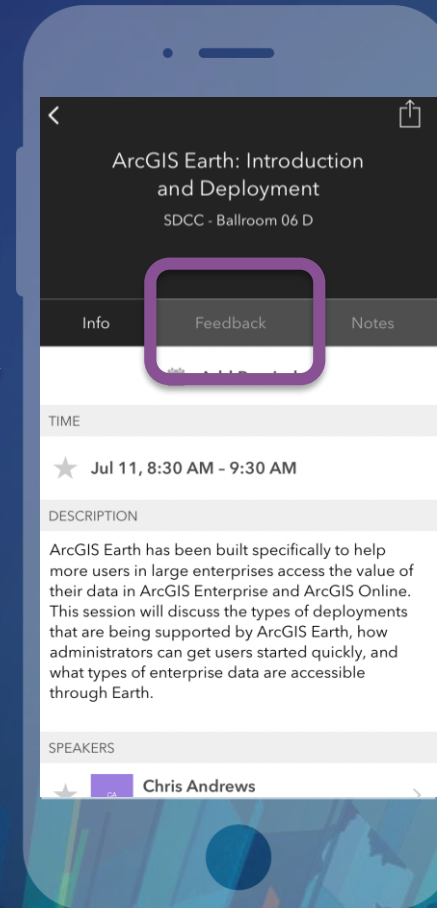
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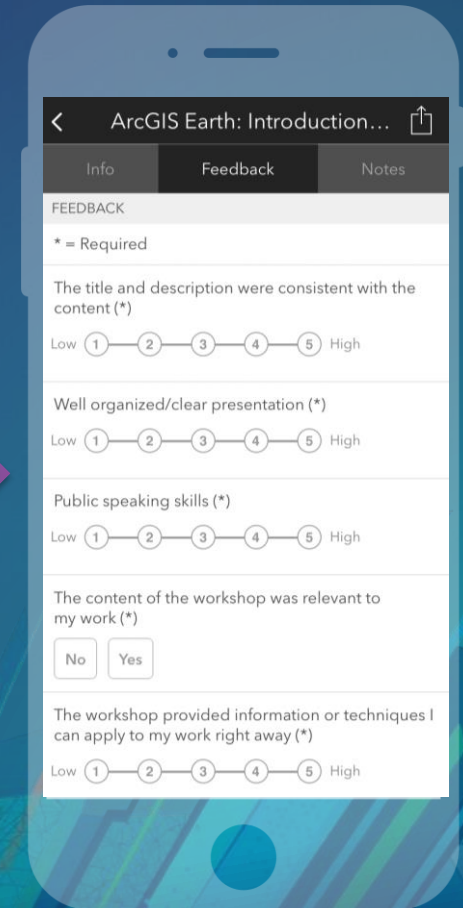
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WORKSHOP	LOCATION	TIME FRAME	PRESENTERS
How to Build Maps from Statistical Data in Fifteen Minutes	Room 10	Wed. 10:00 – 11:00 am	Jim Herries and Diana Lavery
Use Map Styles to Unlock Information in Your Web Maps	Room 33C	Wed. 1:00 – 2:00 pm	Jeremy Bartley and Jim Herries
	Room 17B	Thur. 2:30 – 3:30 pm	
Principles of Policy Mapping	Room 10	Wed. 2:30 – 3:30 pm	Jim Herries and Diana Lavery
Top 10 Tips for Policy Story Maps	Room 03	Thur. 8:30 – 9:30 am	Jennifer Bell and Diana Lavery
Content Tour: People Category	Demo Theater 01	Thur. 12:15 – 1:00 pm	Jim Herries
Solving Web Map Challenges	Room 16A	Thur. 4:00 – 5:00 pm	Jim Herries and Diana Lavery





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