

NORTH STATE HYDROGEN FUELING NETWORK SITING STUDY

Goals of the study

HCAOG advanced a vision for a **regional network of H2 fueling stations in California's North State region** through a Rural Planning Assistance Discretionary Grant:



- Identifying characteristics of an H2 fueling network that could support both transit and freight users,
- Using advanced network modeling to develop multiple potential networks,
- Validating candidate networks with stakeholders.

Study approach



Modeling used **2 optimization techniques** to build networks with different numbers of stations, selected from current transit dispatch locations and other sites along major highways.

Networks optimized to maximize transit coverage, minimize additional deadhead miles, and maximize freight served.

Network with 8 stations

			kgH2
1	HTA	24	593
2	RABA	13	352
3	BUTTE	25	487
4	LAKE	13	330
5	TEHAMA	8	216
6	MENDOCINO B	8	138
7	REDWOOD	8	177
8	NEVADA	8	172

Total added deadhead miles	0 miles
Total transit H2 demand	2,465 kg
% of transit vehicles covered	76%
Average freight score	4.3 out of 10

Key results

- Limited potential to share infrastructure between transit agencies given large distances.
- Small set of locations¹ with significant transit demand and freight demand are in most networks and could be prioritized for early investment.
- Results consistent with sensitivity analysis, except when freight is prioritized over transit (see below).

Looking forward

Areas for further study could include:

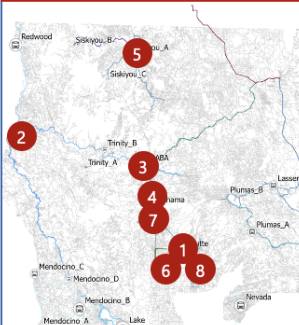
- Agency-specific transition plans
- Intercity bus and freight demand studies
- Station and H2 supply business models
- Models for shared infrastructure

Real-world challenges to H2 development in the region and beyond remain very relevant, including:

- Long distances between agencies,
- Transit and freight H2 vehicle availability,
- Workforce availability and skillsets, and,
- Need for public and private collaboration

Figure 1: Network with 8 stations in base case and sensitivity.

Sensitivity with freight priority



			kgH2
1	BUTTE	25	487
2	HTA	24	593
3	RABA	13	352
4	CAND. 49	7	198
5	SISKIYOU A	4	124
6	GLENN	2	65
7	CAND. 57	1	18
8	CAND. 43	0	0

Total added deadhead miles	93 miles
Total transit H2 demand	1,837 kg
% of transit vehicles covered	54%
Average freight score	6.8 out of 10

1. Set of consistently identified locations included HTA, Redding, Butte County, Lake County, Tehama County, Mendocino, Nevada, and Redwood Transit.