This is a case study of one of the proposals deemed feasible by the FAA in the Phase One Report. It is perhaps illustrative of other proposal decisions.
Preamble
This is an Approach
Aircraft on this approach into San Francisco are lined up over the bay on the runway center line and fly straight in for landing.

This is the BIGSUR arrival route.
It is used to bring aircraft from cruise altitude up at about 35,000 ft down to the approach at about 4000 ft.

As the aircraft fly down the arrival they enter Class B airspace about 30 miles from SFO. It will be shown in other slides. This is protected and controlled airspace.
One of the major goals of NextGen is to fly the arrivals with the engines set to idle and gliding down under computer control. This is called Optimized Power Descent or OPD. The computer that controls the descent is called a Flight Management System or FMS.

Now keep these three things in mind.
You have the approach where aircraft are lined up on the runway.
You have the arrival that brings the aircraft down from high altitude to the approach.
And you have class B airspace to protect arriving aircraft that are within 30 miles of SFO.

Now to the Tall Tale of the Creation of SERFR

In the beginning the National Airspace was without form and void. On the first day, the FAA created arrivals to provide a path for airplanes cruising at 30000 ft to descend to a final approach. And one of those arrivals is called BIGSUR.

The BIGSUR arrival connected planes in the heavens over Camp Roberts which is in the wilderness, to an approach over San Francisco Bay that leads to San Francisco airport.

And the FAA looked upon the BIGSUR arrival and said: This is good.
But then along came the devil's representative from the Airlines and said: Behold, the BIGSUR arrival is too steep to use computer daemons for gliding with engines idled softly like angels, all the way from cruise over the wilderness, down to the approach. We need a new arrival that can be used for gliding into landing, so we can save a few shekels on jet fuel.

And the FAA agreed with the devil, saying: It is not good for the BIGSUR to be alone. I will make a helper suitable for gliding arrivals.”

So the FAA took a rib from BIGSUR arrival, and created the SERFR arrival to be an help mate for BIGSUR.
And the FAA saw that the BIGSUR and SERFR arrivals did stand side by side and they worked together as a happy couple.

And the FAA saw that it was good.
How were the planes distributed between SERFR and BIGSUR?

Appendix D:
- All traffic equipped to fly an RNAV STAR are assigned the SERFR.
- All traffic not equipped are assigned the BSR.

As the FAA gazed upon what they had wrought, they decreed the first commandment of Next GEN:
Airplanes with computer control Deamons shall use the SERFR Arrival to glide with angels softly down to the approach over the Bay.

Then the FAA decreed the second commandment of Next Gen:
Airplanes without computer control daemons shall use the BIGSUR arrival to fly under pilot control down to the approach by the Bay.

And the FAA and the Airlines said: This is good.
But then aircraft on the SERFR arrival did taste of the fruit, from the tree of knowledge of noise and pollution. And there arose from below the SERFR route, a great wailing and gnashing of teeth in the communities scattered across the land from Carmel Valley up to the Metoplex of the San Francisco Bay. And the cries of the communities rose up into the heavens to smite the congressional representatives.

And the Congressional representative pointed at the FAA and did sorely chastise the FAA saying:
It is all your fault! Why do your airplanes make rude noises and emit exhaust that is offensive to our people.

And the FAA turned around and pointed at the Air Traffic Control Angels and said:
It is all your fault! Why do you let our aircraft arriving on the SERFR route make those rude noises and exhaust that is offensive to the good people of the Metroplex.
This is a side, cross section view of the Class B concentric rings. It resembles the cross section of an inverted wedding cake. The red line shows the outer boundary and floor of each ring. The rings are 5 miles wide. The outer ring on the right has a floor of 8,000 ft. The next ring inward (to the left) has a floor of 6,000 ft. The next ring, 4,000 ft, and then 2,500 ft.

And the Air Traffic Control angels said, O Lord, it is all the fault of this Class B Airspace which thou hast given us for sheltering thy aircraft.

Gaze thou upon the Airplanes descending on the BIGSUR arrival, through Class B Airspace without computer control.

Notice that they remaineth all times within Class B airspace.
This is the most important slide of the presentation.

By design, the SERFR glide path cannot remain within the Class B airspace. It would appear this was a major OOPS on the part of the FAA, which caused a major cluster flux of aircraft over our heads. That is, the right hand of the FAA did not take into consideration what their left hand of Air Traffic Control (ATC) was doing to enforce their Class B rules, while designing and implementing the SERFR arrival. Probably nobody recognized that there was a conflict for several months.

After SERFR went into operation, the ATC immediately had to notice that there was a problem. ATC is are required by the rules to tell aircraft about to exit the Class B airspace to either:

1) Maintain altitude to remain within the Class B airspace (increase throttle); or
2) Slow down to less than 200 knots to comply with the speed limit below the Class B airspace.

Either way the aircraft is forced to make noise to comply and cannot continue gliding on with engines at idle.

We don’t know when ATC started communicating the problem, or even when the FAA started listening to the ATC. However, the FAA has done nothing to fix the problem for over a year now.

Conceivably, this is the major source of noise over the SERFR route. However, we do not know since we have no data that correlate noise volume from a particular aircraft to the configuration that particular aircraft.

That is why, when it comes to understanding the cause of noise we are truly flying blind.

Back to Genesis:

But now behold the SERFR arrival descending through Class B Airspace. The SERFR arrival goes in and out of Class B Airspace. Flights gliding on the SERFR route to keep popping out of the bottom of the CLASS B airspace. And the aircraft are naked and they are ashamed of their speed.
This is a top view of the Class B concentric rings. The rings are 5 miles wide. The outer ring has a floor of 8,000 ft. The next ring inward has a floor of 6,000 ft. The next ring 4,000 ft and then 2,500 ft.

By thy commandments, we must order thy aircraft to maintain altitude to remain with the Class B airspace, which causes them to make a great noise.

Otherwise we must order thy aircraft to slow down, which also causes them to make a great noise.
And the FAA said: for sooth. This has not happened before within our short memories. Why did the communities never before complain.

And the Air Traffic Control angels replied saying:
Verilly, the number of aircraft popping out of our bottom in ancient times were few.

But now the number doth wax greatly.
And so the FAA said:
Then let us change the boundaries of Class B airspace so that it may contain all of the aircraft on the SERFR arrival, so that the ATC doth vex not their Pilots.
But the Community continued to cry out in ever greater numbers.

And their complaints numbered in the thousands, and then ten of thousands, and then hundreds of thousands.

Crying out in a loud voice they said: O Lord remove this plague of noise and pollution from above hour heads.
One Community’s Suggestion
To FAA
Revert back to BIGSUR

Community Suggestion: New SERFR STAR, using community identified waypoint DAVYJ, shifting the SERFR to the BSR, with additional waypoints with constraints:
- Waypoint 1: 16,000 FT and 280 KIAS
- Waypoint 2: 10,000 FT and 250 KIAS
- Waypoint 3: 8,000 FT

But a few in the community beseeched the FAA to return all the aircraft to the old BIGSUR arrival, saying:

Then all will be quiet, as in former days.

But the FAA was sorely perplexed by the community's request, for the FAA had uttered a solemn oath to the congressional representatives and airline devils never to return aircraft controlled by the computer daemons to the BIGSUR arrival.
After much deliberation and stalling and delays, it finally came to pass that the FAA did decree:

A new arrival shall be born from the seed of the BIGSUR and SERFR arrivals.

We shall call this new arrival the BIG SERFR
The FAA also noticed that the higher altitudes of BIGSUR would prevent gliding using computer daemons to control the aircraft if those altitudes were used in the new BIG SERFR arrival.

That would mean that only aircraft without computer daemons could use the new BIG SERFR arrival.

That would also mean that all the aircraft with computer daemons would continue to use the SERFR arrival.

The FAA also worried that thinking about the problem would be too difficult and sorely tax their limited minds.

So instead the FAA decreed that lower altitudes should be used in the new BIG SERFR arrival.

And the lower altitudes would allow for computer controlled gliding on the new BIG SERFR arrival so that the airlines can save a few shekels on jet fuel.
And the FAA decreed:
Remember the first Commandment of Next Gen:
Aircraft equipped with computer daemons for controlling flight shall use lower altitudes of the new BIG SERFR arrival to glide softly down with the angels to MENLO.
And aircraft equipped with computer daemons for controlling flight shall use lower altitudes of the existing SERFR arrival to glide softly down with the angels to MENLO.

And the FAA decreed:
Remember the second commandment of Next Gen:
Aircraft without computer daemons to control flight shall be banished to the steep and narrow arrival path known to all as BIGSUR.
And then the FAA declared victory and turned to the Congressional Select Committee for approval saying:

Rejoice for we have vanquished this problem that we did not create.

And the FAA rested.
The moral of this story:

Never attribute to *malice*
that which can adequately be explained by
*incompetence*

*Every tall tale must have a moral, no less this one.*