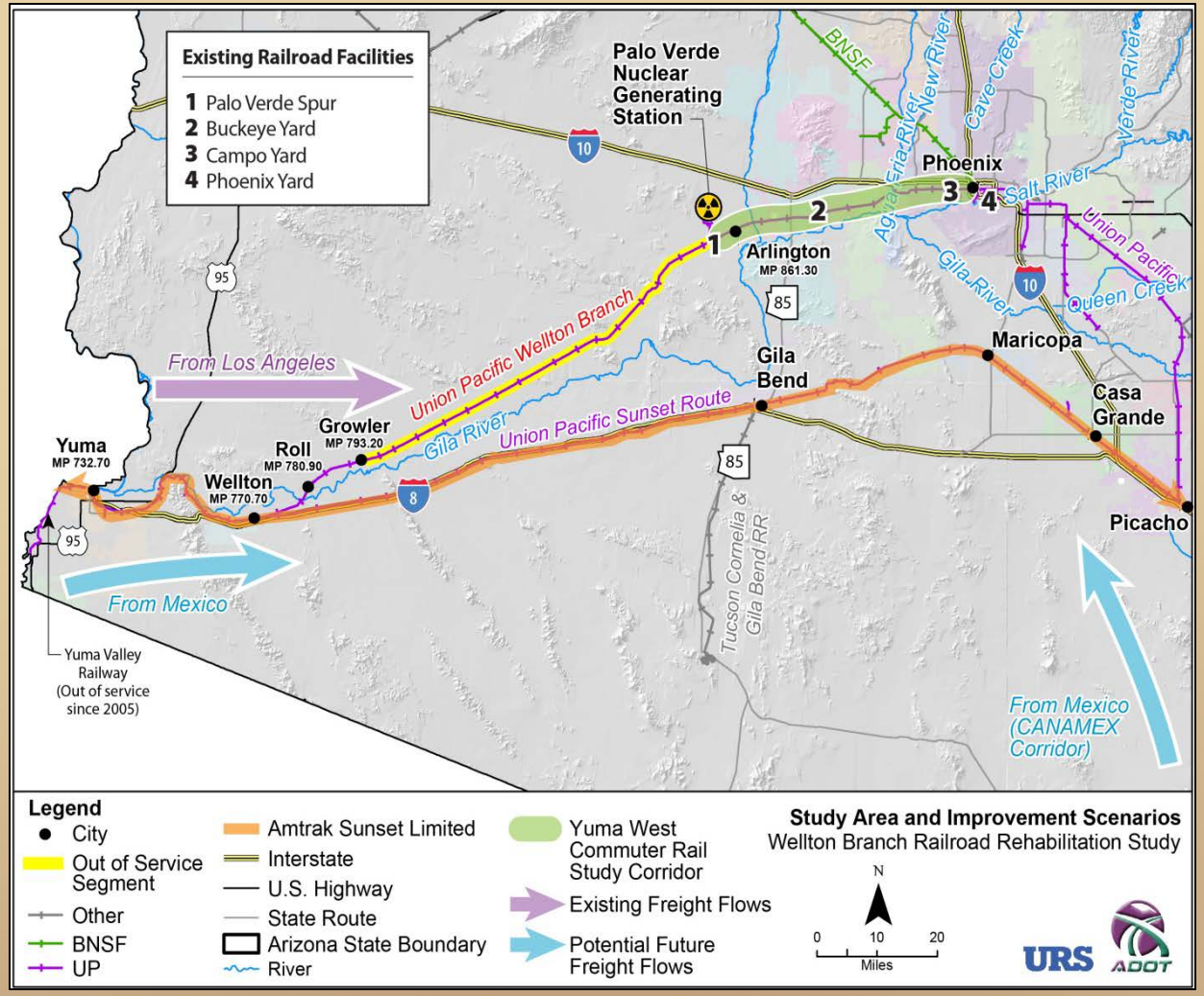
Wellton Branch Railroad Rehabilitation Study

MAG Transit Committee

March 13, 2014

STUDY AREA


Existing Railroad Facilities
1 Palo Verde Spur
2 Buckeye Yard
3 Campo Yard
4 Phoenix Yard
Palo Verde Nuclear Generating Station
BNSF
New River
Cave Creek
Verde River
Phoenix
Salt River
Union Pacific
Queen Creek
Arlington
MP 861.30
Gila River
Maricopa
Gila Bend
Casa Grande
Picacho
From Los Angeles
Union Pacific Wellton Branch
Union Pacific Sunset Route
Growler
MP 793.20
Roll
MP 780.90
Wellton
MP 770.70
Yuma
MP 732.70
From Mexico
Yuma Valley Railway
(Out of service since 2005)
Tucson Cornelia & Gila Bend RR
From Mexico (CANAMEX Corridor)
Legend
City
Out of Service Segment
Other
BNSF
UP
Amtrak Sunset Limited
Interstate
U.S. Highway
State Route
Arizona State Boundary
River
Yuma West Commuter Rail Study Corridor
Existing Freight Flows
Potential Future Freight Flows
Study Area and Improvement Scenarios
Wellton Branch Railroad Rehabilitation Study
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ADOT

BENEFITS OF WELLTON BRANCH REHAB

Rehabilitation of the Wellton Branch would provide benefit to UP, Amtrak, and the State of Arizona by:

- Rail connectivity between Phoenix and California
- Amtrak access directly to Downtown Phoenix
- Improvements towards ADOT State Rail Plan vision for passenger rail

- Potential of additional freight customers along Wellton Branch
- Increased support of economic development objectives

EXISTING CONDITIONS

Conclusions and Assumptions

- **Track**
  - Replace Ballast, Rail, Ties for Class 3 and 4 operation
  - Lengthen JBS Five Rivers Cattle Feeding – McElhaney Yard siding
- **Railroad Signal System**
  - New system for Class 3 and 4 operation
- **At-Grade Crossings**
  - Upgrade all crossings
- **Bridges**
  - Safety walkways and handrails
  - Remove Vegetation
  - Cosmetic Repair
  - Detailed Inspection Recommended

DEVELOPMENT OF ALTERNATIVE SCENARIOS

Development of each scenario included the following considerations:

1. Coordination with Amtrak to discuss current train schedules and potential future train schedules.
2. Coordination with Union Pacific Railroad (UPRR) to identify current and future train operations.
3. Analysis of the potential requirements and cost for Positive Train Control (PTC) for corridor.
4. For each alternative scenario, the train operations requirements and UPRR policies and practices was identified.

ALTERNATIVE SCENARIOS

- **Scenario 1 – Through freight service only (FRA Class 2 Track) w/ max speed = 25 mph**
- **Scenario 2 – Through freight service and basic Amtrak service (FRA Class 3 Track) w/ max freight speed = 40 mph and max passenger speed = 60 mph**
- **Scenario 2A – Same as Scenario 2, w/ PTC**
- **Scenario 3 – Through freight service and higher speed passenger service (FRA Class 4 Track),**
  max freight speed = 60 mph and
  max passenger = 79 mph

ALTERNATIVE #1: FRA Class 2 Track

Requirements for active portion of Roll Industrial Lead (11.6 mi)

Requirement	Amount	Notes
Clean and replace fouled ballast	-	Achieve 8 inches of sub-ballast and 8 inches of ballast
Improve drainage and culverts	-	Remove debris and vegetation
Replace bad ties	30%	
Weld and grind	-	End batter, switch points, turnout frogs
Extend siding at McElhaney Yard	2,900 ft. (0.55 mile)	Will accommodate 125-car trains
Bridge/Handrail Repairs	6 bridges (2,240 ft.)	Minor repairs
Active Warning Devices	5	Located at at-grade public crossings
Passive Cross-Bucks & Railroad Crossing sign	1	Public crossing at Avenue 37E
Concrete Panel crossing surfaces	9	6 public crossing, 3 private crossings

ALTERNATIVE #1: FRA Class 2 Track

Requirements for inactive portions of Roll Industrial Lead (19.7 mi) and Wellton Branch (56.9 miles)

Requirement	Amount	Notes
Replace bad ties	60%	
Replace bad rail	20%	115# rail, weld and grind rail end batter (76.6 mi on main track; 1.39 mi for 2 sidings)
Replace turnouts	1	East end of Gillespie spur with #10 turnout with 115# rail on wood ties
Weld and grind switch points and turnout frogs	Max 5	
Bridge and Handrail repair	123 bridges (8,660 ft.)	Minor repairs on 115 bridges Major repairs on 8 bridges (5% of total)
Bridge replacement	22	195 ft. at Milepost 482.75 where washout occurred (1 total) 50% of 42 bridges that are 10’ to 30’ long (21 total - 360’)
Active warning devices	5	Located at a-grade public crossings
Cross-Bucks and Railroad crossing signs	10	Located at public crossings
Concrete Panel crossing surfaces	22	15 public crossings, 7 private crossings

ALTERNATIVE #2 and 2A: FRA Class 3 Track

Requirement	Amount	Notes
Remove rail, ties and ballast	Multiple	90.8 miles of main track; 2.73 miles of passing sidings and grade roadbed
Drainage Improvements	Multiple	90.8 miles along main track
New ballast and ties	Multiple	10” sub-ballast and 10” rock crushed ballast , new wood ties, new 115# CWR along 90.8 miles of main track and 6.8 miles of passing siding
New turnouts	15	8 new #20 turnouts and 7 new #10 with 115# rail;
New bridges	8	New bridges will be concrete or steer girder (290’)
Bridge and handrail repair	Multiple	124 Minor repairs (12,201 ft.), 8 Major repairs (671 ft.)
Bridge replacement	22	195 ft. at Milepost 482.75 where washout occurred (1 total) 50% of 42 bridges that are 10’ to 30’ long (21 total - 360’)
Active Warning Devices	15	10 existing at-grade crossings, 5 additional currently with passive warning
Passive Cross-Bucks	6	Replacement
Concrete crossing panels	31	21 public crossings, 10 private crossings
Railroad signaling system	Multiple	Install TWC or PTC along 90.8 miles of main track

ALTERNATIVE #3: FRA Class 4 Track

Requirement	Amount	Notes
Remove rail, ties and ballast	Multiple	90.8 miles of main track; 2.73 miles of passing sidings and grade roadbed
Drainage Improvements	Multiple	90.8 miles along main track
New ballast and ties	Multiple	12” sub-ballast and 12” rock crushed ballast , new concrete ties, new 136# CWR along 90.8 miles of main track and 10.2 miles of passing siding
New turnouts	19	12 new #20 turnouts and 7 new #10 with 136# rail;
New bridges	12	New bridges will be concrete or steer girder (600’)
Bridge and handrail repair	Multiple	123 Minor repairs (12,124 ft.), 8 Major repairs (671 ft.)
Bridge replacement	23	2 at MP 482.75 where washout occurred plus 77 ft. per bridge 50% of 42 bridges that are 10’ to 30’ long (21 total - 360’)
Talking detectors	6	Replacement
Active Warning Devices	21	10 existing at-grade crossings, 11 additional currently with passive warning
Passive Cross-Bucks	10	Private crossings up to latest standards
Concrete crossing panels	31	21 public crossings, 10 private crossings
Railroad signaling system	Multiple	Install PTC along 90.8 miles of main track

CAPITAL COST ESTIMATES

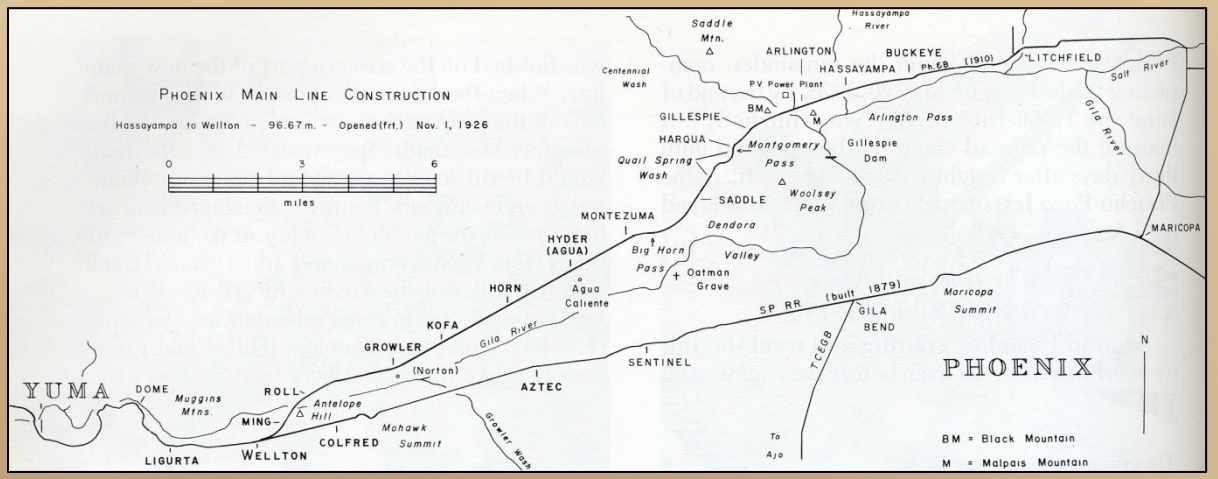
Scenario	Total Estimated Cost	Cost/ Route Mile
S1 – Class 2 Track	$165 Million	$1.8 Million
S2 – Class 3 Track	$195 Million	$2.1 Million
S2A – Class 3 Track (w/ PTC)	$266 Million	$2.9 Million
S3 – Class 4 Track	$420 Million	$4.6 Million

CONCLUSIONS

- Planning level cost estimates developed for freight and passenger rail scenarios
- Current freight demand along active Wellton Branch line / Phoenix Line does not warrant re-opening Wellton Branch
- As freight demand increases the Wellton Branch line can be rehabilitated in phases
- Passenger Rail Vision for two trains per day requires rehabilitation of out of service corridor
- Infrastructure investment is not cost effective solely for passenger rail on corridor
- Continue to identify and develop freight opportunities

NEXT STEPS TO CONSIDER

- Conduct detailed inventory
- Coordinate with UPRR and Amtrak to identify potential train and traffic volume flow
- Conduct train simulation if necessary
- Coordinate with UPRR to confirm standards
- Revise cost estimates as necessary based on updated detailed information



QUESTIONS/DISCUSSION

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