TRANSPORTATION PROJECT REPORT

DRAFT DESIGN REPORT
&
ENVIRONMENTAL ASSESSMENT

P.I.N. 2016.53.101

ROUTE 12

HAMLET OF PARIS

TOWN OF PARIS

ONEIDA COUNTY

JULY 1997

UNITED STATES
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
GEORGE PATAKI, GOVERNOR
JOSEPH H. BOARDMAN
COMMISSIONER

REG 97-1 (1/30)

II. PROJECT IDENTIFICATION, EVOLUTION, CONDITION AND NEEDS, AND OBJECTIVES

A. Project Identification

1. Project Type: Highway Reconstruction/Realignment

2. Project Location/Description

   a. Route 12
   SH 8227, Waterville - New Hartford, Pt. 1
   SH 8298, Waterville - New Hartford, Pt. 2
   Hamlet of Paris, Town of Paris
   Oneida County
   2.1± km
   RM 12-2604-1105± to RM 12-2604-1120±

   b. Regional Map - Appendix A

   c. Project Location Map - Appendix A

B. Project Evolution

This project was initiated to address the substantial accident problem along this section of highway.

An informational meeting with the Town of Paris Town Board was held on June 12, 1996 informing them of the Department's intention to study and develop solutions to the existing transportation deficiencies in this area. During the scoping phases the following alternatives were selected for evaluation: Null/No-Build, Reconstruction on a shifted Alignment, and Construction on a New Alignment.

C. Condition and Needs

1. Transportation Conditions and Engineering Considerations

   a. Functional Classification and Federal-Aid System

   Federal-Aid System - Surface Transportation Program (STP)
   Functional Classification - 07 - Rural, Major Collector

b. Ownership and Maintenance Jurisdiction - New York State Department of Transportation

c. Culture, Terrain and Climatic Conditions

Culture - The predominant land use activity within the project area is rural residential and agricutural, interspersed with three churches, a volunteer fire department, two commercial structures and a cemetery.

Terrain - The terrain in the vicinity of the project can be described as rolling.

Climatic Conditions - The project is located in USDA Zone 4b which has an average annual minimum temperature of between -29°C and -32°C. Portions of Rte. 12 within the project limits are subject to frequent occurrences of white outs & drifting snow because of its geographic situation and the northwest winter winds. The project area is also subject to a considerable amount of fog.

d. Control of Access - The highway is without control of access. There are several intersecting roads and driveways in the project area that do not conform to NYSDOT Policy and Standards concerning Entrances to State Highways.

e. Existing Highway Segment

1. ROW Width - The right-of-way width along Route 12 within the project limits, ranges between 20± m and 50± m.

2. Travel Lanes/Shoulders - Route 12 is comprised of two 3.3 m travel lanes with 2.4 m shoulders. A 0.8 km segment of highway at the intersection of Fountain Street includes a full width (3.6 m) safety widening to provide for a right turn lane (south-bound) and for a right hand passing lane (north-bound).

3. Curb - There is no curb along this section of Route 12.

4. Median - There are no medians in the project area.

5. Grades/Curves - Within the project area there are eight horizontal curves. The existing alignment through the hamlet consists of a series of two Broken-Back-Curves (two horizontal curves turning in the same direction seperated by less than a 450 meter tangent). There are nineteen vertical curves, eleven sag and eight crest curves, with grades ranging from 0.8% to 6.0%.

6. Intersection Geometry/Conditions - There are a total of eight intersecting roads with Rte. 12 within the project limits. Seven of these intersections are within 260 meters of each other and six of the seven are adjacent to the "Village Green", on the east side of Rte. 12. Doolittle Rd. (CR18), Paris Hill RD. (CR9), and Snowden Hill Rd., intersect Rte. 12 a total of six times along the east side of the State highway. Shanley Rd. (CR9) intersects Rte 12 from the West opposite the "Village Green" and Fountain St.(CR17) intersects the State Highway from the West near the northern terminus of the project. Maxwell Rd. intersects with Fountain St. approximately 20 m west of Rte. 12.

7. Parking Regulations - There are no parking restrictions within the project area.

8. Roadside Elements -

   (a) The existing 2.4 m shoulder width is sufficient to accommodate bicyclists, although the condition of which, is deteriorating. No sidewalks or any other special roadside elements exist within the project limits.

   (b) Control of Access - The highway is without control of access and there are several intersecting roads and driveways in the project area that do not conform to NYSDOT Policy and Standards concerning Entrances to State Highways. There are twenty-three residential and three commercial driveways along a 1.5 km section of highway in the project area averaging approximately one driveway every 50 meters.

   (c) Clear Zone - The minimum clear zone in the project area is 3 meters. There are several obstacles adjacent to the existing alignment within the desired clear zone such as trees, iron and wooden fences, utility poles and buildings.

f. Abutting Highway Segments and Future Plans for Abutting Highway Segments

Existing - The portion of Route 12 which abuts the north end of the project consists of two 3.3 m travel lanes with 1.8 m shoulders. The portion of Route 12 which abuts the south end of the project consists of two 3.3 m travel lanes with 2.4 m shoulders. There are non-standard vertical and horizontal curves along both of the abutting highway segments. The existing pavement and shoulders of these segments exhibit general aligator cracking and had a surface score of poor to fair.

Future Plans - The future plans for the abutting highway segments include maintainence of the pavement only. There are no capital improvements scheduled within the five year plan.

g. Speeds and Delay - Describe:

1. Existing Speed Limits - 55 mph (Statutory) entering and exiting the project area.
   40 mph (Regulatory) within the project area
   (Refer to Proposed Alternative Map - Appendix E)

2. Actual Operating Speed - A speed study to determine the 85th percentile speed is not necessary for this project.

3. Travel Speed and Delay Runs - No travel speed and delay runs are necessary for this project.

4. Travel Speed and Delay Runs for Future - No travel speed and delay runs are necessary for this project.

h. Traffic Volumes
Location: Rte 12- CR #9, Paris Hill Rd. To CR #13, Chuckery Cor. Rm12-2604-1127

	Existing 1999	Design 2019
AADT	4300	6000
DDHV	285	400
DHV	495	690

Percent Heavy Vehicles - 9.4%

i. Level of Service (LOS) - The existing level of service for this section of Route 12 is "C".

j. Non-Standard Features and Other Non-Conforming Features - There are several non-standard and non-conforming features within the project limits.

The existing alignment through the hamlet consists of a series of two broken back curves. They are a 350m radius curve, a 435m radius curve, and a 63m radius curve, separated by 40m and 150m tangents (straight section of highway) respectively.

There are three vertical curves that are non-standard with respect to stopping sight distance within the project limits.

Of the eight intersecting roads, six are skewed greater than thirty degrees from normal, three of which, are on the outside of the 63 m radius curve and two are on the outside of the 435m curve in the hamlet.

There are several utility poles, stone walls and other obstacles within the required clear zone.

k. Safety Considerations, Accident History and Analysis - An accident analysis of the project area indicates that this section of Route 12 has a substantial accident history. Based on the accident history during the period Jan. 93 to Dec. 95, the accident analysis performed for the proposed project found the accident rate along a four kilometer segment of Route 12 to be 2.15 accidents per million vehicle kilometers compared to 1.71 accidents per million vehicle kilometers for the Statewide average. The analysis also showed that the accident rate along the 0.3 kilometer section of highway through the 63 m radius curve and along the multiple intersections, was considerably higher. A cluster of ten accidents resulted from drivers losing control of their vehicles along the 63 m radius curve. Five of the ten accidents resulted in injuries, while one involved pedestrians and one resulted in a fatality. There were also nine additional accidents at or near the intersections within the project limits. A complete accident analysis can be found in Appendix D.

l. Pavement and Shoulder Conditions - The 1996 surface score ratings given for this section of Route 12 were 5 and 6. This is based on a scoring system of 1 to 10, with 10 being new. Scores of 5 and 6 indicate poor and fair pavement with distress clearly shown. The existing pavement exhibits both general alligator cracking and widening drop-off. Shoulder deterioration exhibits multiple cracking and deformation with potholes throughout the area surveyed. The road history for this section of highway may be found in Appendix B.

m. Guiderailing, Median Barrier and Impact Attenuators - There are no median barriers, impact attenuators or guidrailing within the project limits.

n. Traffic Control Devices - There are no traffic signals within the project limits. Signs and pavement markings are the only traffic control devices throughout the project area, some of which are faded, deteriorated and need to be upgraded. There is also a lighted "25 MPH" speed limit advisory sign with flashing lights on either side of the 63 m radius curve.

o. Structures - There are no structures within the project limits.

p. Hydraulics of Bridges - There are no bridges within the project limits.

q. Drainage Systems

Type - The drainage system within the project limits consists primarily of open drainage. This system is made up of ditches, cross culverts, and a 100 m section of asphalt gutter. There are two 600 mm RCP culverts crossing the southern portion of Rte. 12, one culvert crossing Rte. 12 in the hamlet, three 750 mm CMP culverts crossing the northern portion near Fountain Street and two 450 mm RCP culverts crossing Shanley Road, one near the intersection of the proposed alignment, and one near the intersection of existing Rte 12. There are also six driveway culverts within the project limits. Drainage within the Hamlet itself consists of only one 450 mm culvert that crosses Rte. 12 and one 450 mm culvert under one of the cross roads near the "Village Green".

Deficiencies/Needs - Existing ditches along portions of the project are filled and plugged with overgrowth to varying degrees. Also several cross culverts, both reinforced concrete pipe and corrugated metal pipe, varying in size, have been identified as deficient and in need of cleaning and/or replacement.

r. Soil and Foundation Conditions - The following soil profile was derived from information obtained from the United States Department of Agriculture Soil Conservation Service publications and from the New York State Department of Transportation Geotechnical Engineering Design Manual.

The soils present in this area were formed on mostly thick glacial tills from limestone, shale, siltstone, and sandstone. Surface soils (225 mm - 250 mm below original ground surface) are composed of mostly stoney *sand* and *silt* with traces of *clay*. Subsoils are long graded, stoney, dominately *silty* mixtures with stones and boulders present. Bedrock ranges from 0.3 m to 1.0 m. Variable quantities of boulders will be encountered, but it is very unlikely that rock excavation will be necessary except in very deep cuts.

This material provides an excellent foundation for fills and other structures. Depth of foundation course is a function of the drainage characteristics of the soil. A minimum of 300 mm should be estimated for all cuts with ample rounding to allow for greater depth where necessary. Wet split pockets will be encountered that may require removal and waste. Because of this, cut slopes may be unstable and will require drainage or special treatment.

Subsurface investigation will be performed in this area to verify the above findings.

s. Utilities -There is an overhead: single-phase, 7.62kv, phase to ground facility, cable TV and telephone along the existing highway. There is a 500 mm (20") and a 600 mm (24") gas transmission line that cross under Rte. 12 approximately 240 m north of Fountain Street, near the Marshall - Kirkland Town Line.

t. Railroads - There is not a railroad in the project area.

u. Visual Environment - The visual environment of the project area consists of rural, open farmland, a mix of deciduous hedgerows interspersed with meadows and pastures. There are views of the surrounding hills at either end of the project. The middle portion is a hamlet with such man made features as residential and commercial buildings, churches, a cemetery and the "common" in the center of the hamlet. The hamlet also consists of mowed lawns, with large old street tree maples, ornamental plantings, stone walls and fences. This area consists primarily of architecture of the late 1800's.

v. Provisions for Pedestrians and Bicyclists - This section of Route 12 is categorized as a future New York State Bike Route. There are however few generators on this length of highway. The existing shoulder pavement is currently deficient in some locations, forcing bicyclists into the travel lanes.

w. Planned Development for Area - According to the Regional Planning and Program manager, there is no known planned development for this area.

x. System Elements and Conditions - The system elements and conditions in the project area do not warrant any special considerations.

2. Needs

a. Safety Deficiencies - There are a number of safety deficiencies that contribute to the high accident rate through the project area. These include non-standard horizontal and vertical curves, and a large number of intersecting roads with the State Highway within a short distance. The primary safety deficiency however, is the 63 meter radius curve near reference marker 12-2604-1113.

b. Pavement Deficiencies - The existing pavement through the project area was assessed in 1996 and was rated as 5-6 (poor-fair), and in need of rehabilitation.

c. System Deficiencies - This route is designated as a Rural, Major Collector. Loss of this route would result in a significant disruption to the transportation system.

d. Modal Interrelationships - Route 12 is a major north-south route in the project area. This facility provides efficient access from Routes 5, 8, & 12 in the Utica area to Waterville and Rte 20. The Hamlet of Paris is a major connecting point for the Villages of Cassville, Clayville, Clinton, Deansboro, New Hartford, Oriskany Falls, Sauquoit, and Washington Mills.

e. Bridge Structural Deficiencies - Not Applicable

f. Capacity Deficiencies - None

g. Mobility Deficiencies - Mobility has not been identified as being deficient.

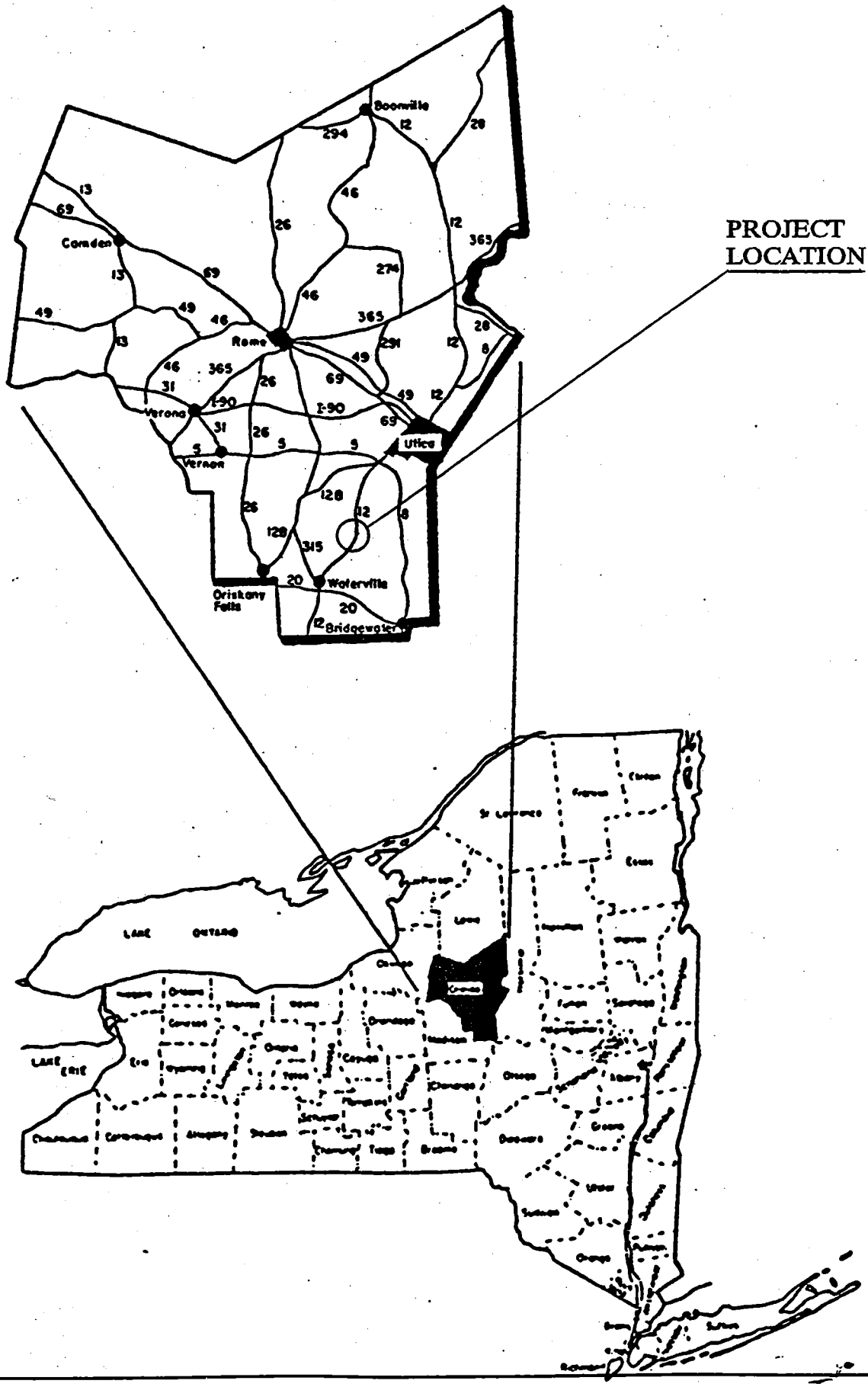
h. Social Demands and Economic Development - There are no immediate development expansions that would require increased capacity to this section of highway.

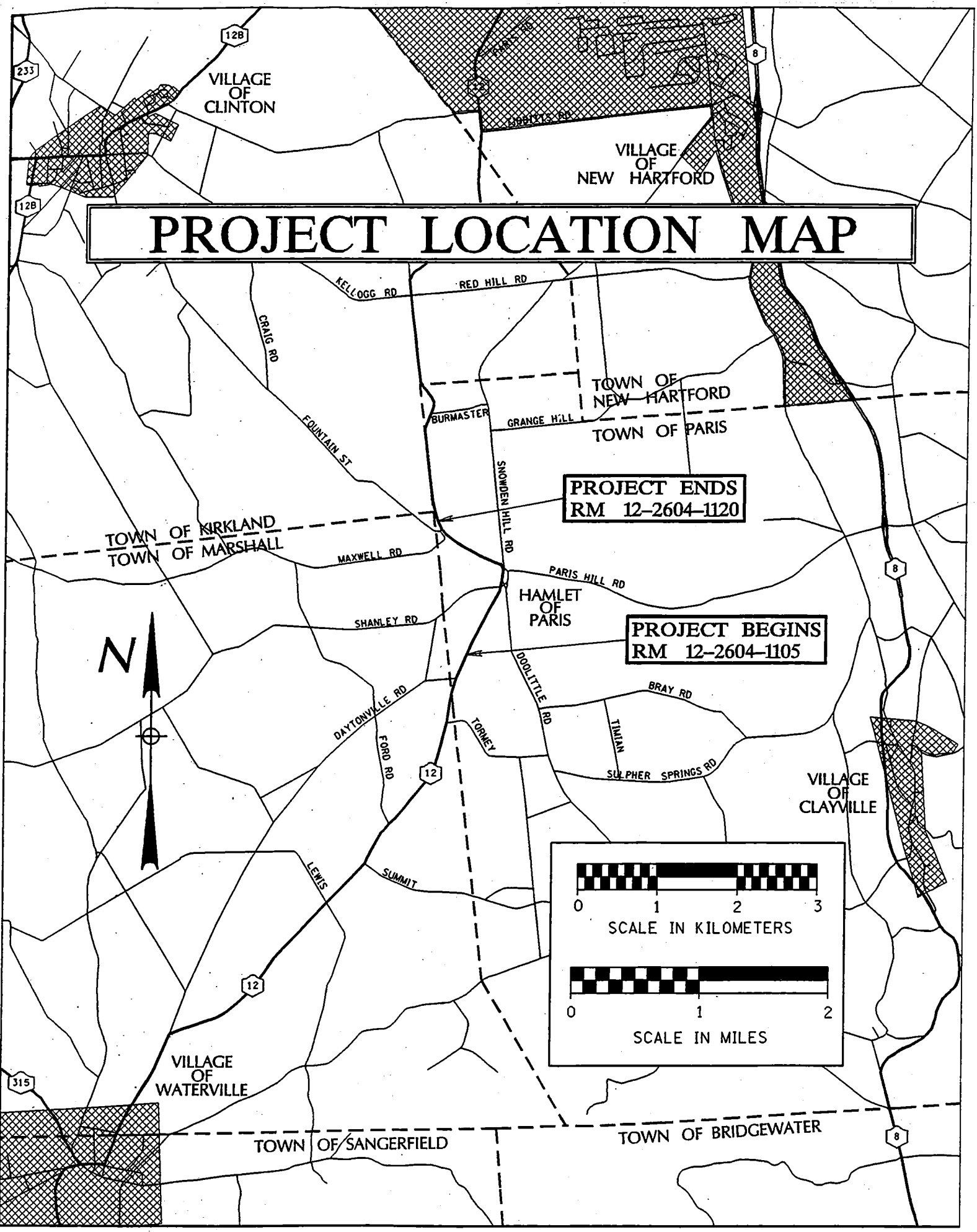
i. Transportation Plan - Not applicable.

D. Objective

1. To reduce the number of accidents along this section of highway.

REGIONAL MAP




PROJECT LOCATION MAP
VILLAGE OF CLINTON
VILLAGE OF NEW HARTFORD
TOWN OF NEW HARTFORD
TOWN OF PARIS
TOWN OF KIRKLAND
TOWN OF MARSHALL
TOWN OF SANGERFIELD
TOWN OF BRIDGEWATER
VILLAGE OF WATERVILLE
VILLAGE OF CLAYVILLE
HAMLET OF PARIS
PROJECT ENDS
RM 12-2604-1120
PROJECT BEGINS
RM 12-2604-1105
KELLOGG RD
RED HILL RD
CRAIG RD
FOUNTAIN ST
BURMASTER
GRANGE HILL
SNOWDEN HILL RD
MAXWELL RD
PARIS HILL RD
SHANLEY RD
DOOLITTLE RD
BRAY RD
TIMIAN
SULPHER SPRINGS RD
TORMEY
DAYTONVILLE RD
FORD RD
LEWIS
SUMMIT
N
0 1 2 3
SCALE IN KILOMETERS
0 1 2
SCALE IN MILES

MEMORANDUM
DEPARTMENT OF TRANSPORTATION

TO: S. J. Zywiak, Regional Design Engineer

FROM: Dan Paddick, Regional Traffic Engineer DP

SUBJECT: **PIN 2016.53.101**
ROUTE 12 RECONSTRUCTION
TOWN OF PARIS, ONEIDA COUNTY

DATE: February 26, 1997

Attached is an Accident Analysis Summary sheet. As a result of our safety investigation, we offer the following:

SAFETY DEFICIENT LOCATIONS
(RM 1106 TO RM 1108 & RM 1122 TO RM 1124)

Since no accident clusters or patterns occurred, we have no recommendations.

HORIZONTAL CURVE AT RM 1113

A cluster of ten accidents resulted from drivers losing control of vehicles on the abrupt horizontal curve. These collisions included four head-on accidents, four run-off-the-road accidents, one rear-end accident, and one pedestrian accident. Five of the ten accidents resulted in injuries and one resulted in a fatality. We recommend reconstruction of this section of highway on new alignment to provide standard horizontal curvature. A maximum cost of $1,721,100 for this improvement will yield a benefit/cost ratio of 1.

Please contact Joseph Oriolo at 2785 if you need additional information.

DGP:JFO:prc

cc: C. Riedel, Safety Program Management Bureau, 5-314
T. Lusher, Design Squad Supervisor (w/attach.)
M. Favale, Project Manager

ARC2.93 ACCIDENT SUMMARY SHEET

P.I.N. 2016.53 IDENT. #

COUNTY Oneida PROJECT Route 12

[X] TOWN RM 12-2604-1100 to 1124

[ ] CITY

[ ] VILLAGE OF Paris

FROM 1/1/93 TO 12/31/95

PART I. PREPARE FOR ALL HIGHWAY INVESTIGATIONS

ACCIDENT TYPE	# OF ACCIDENTS
LOST CONTROL	14
SIDESWIPE	3
REAR END	5
RIGHT ANGLE	2
PEDESTRIAN	1
ANIMAL	2
HEAD-ON	6
LEFT TURN	3
TOTAL	36

SEVERITY	# OF ACCIDENTS
FATAL	1
INJURY	16
P.D.O.	1
N.R.	18
TOTAL	36

PAVEMENT	# OF ACCIDENTS
1) DRY	14
2) WET	6
3) MUDDY	0
4)&5) SNOW/ICE/SLUSH	16
10) OTHER	0
TOTAL	36

WEATHER	# OF ACCIDENTS
1) CLEAR	9
2) CLOUDY	11
3) RAIN	1
4) SNOW	11
5) SLEET/FREEZING RAIN	0
6) FOG	4
10) OTHER	0
TOTAL	36

TIME OF DAY	# OF ACCIDENTS
6 AM-10 AM	7
10 AM- 4 PM	11
4 PM- 7 PM	9
7 PM-12 MID.	5
12 MID-6 AM	4
	21

TIME OF YEAR	# OF ACCIDENTS
WINTER (12,1,2)	11
SPRING (3,4,5)	13
SUMMER (6,7,8)	2
FALL (9,10,11)	10
	21

fo
1/5/97

ACCIDENT ANALYSIS SUMMARY

Project Identification Number (PIN): 2016.53.101
Route: 12
Location: Town of Paris
Reference Markers: 12-2604-1100 to 12-2604-1124
Time Period: January 1993 to December 1995

Accident Rate: 2.15 Accidents/million vehicle kilometers
Statewide Average Accident Rate: 1.71 Accidents/million vehicle kilometers

High Accident Locations (HAL's):

Priority Investigation Locations (PIL's): None

Safety Deficient Locations (SDL's): RM1106 to RM1108; RM1122 to RM1124

Priority Investigation Intersections (PII's): None

Clusters: RM1113

Accidents Before Improvements:

Severe: 5.67 Accidents/Year
Total: 12.00 Accidents/Year

Expected Accident Reduction With Improvements:

Severe: 1.18 Accidents/Year
Total: 1.96 Accidents/Year

64a (9/91)

Page No. _____

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND SAFETY DIVISION

SAFETY BENEFITS EVALUATION FORM

TRAFFIC & SAFETY IDENTIFICATION NUMBER: 201653

EVALUATION [redacted] NO: 1

STUDY PERIOD: From 1,1,93 To 12,31,95 No. of Yrs. 3

Route No. or Street Name	State Highway No.	From or At Reference Marker
12	8277/8298	12 26 04 1 1 3

At Intersection With (If Applicable)	Route No. or Street Name	State Highway No.	To Reference Marker

PROPOSED IMPROVEMENT:
Reconstruct highway on new alignment.
(Improvement Code: 400)

Present AADT: 3800 Future AADT: 4560 Volume Correction Factor (VCF): 1.1

METHOD I (From Reduction Factor Table)
Average Reduction Factor 59 %

METHOD II (Engineering Analysis)
a. Total Accidents: _____
b. Accidents Reduced: _____
c. Calculated RF (b ÷ a): _____ %

METHOD III (For General Upgradings)
a. Existing Accident Rate: _____
b. Future Accident Rate: _____
c. Difference (a – b): _____
d. Calculated RF (c ÷ a): _____ %

BRIEFLY EXPLAIN HOW EXPECTED REDUCTION WAS DERIVED:

Before Accidents: 3.33 Acc/Yr Total & 2.00 Acc/Yr Severe
Accidents Reduced: 1.96 Acc/Yr Total & 1.18 Acc/Yr Severe

SIGNIFICANCE CHECK OF SEVERITY DISTRIBUTION

	FATAL	INJURY	F & I	PDO	TOTAL
a. %by severity	0.68	32.22	32.90	67.09	100%
b. actual	1	5	6	4	10
c. expected	0.1	3.2	3.3	6.7	10.0
d. difference	0.9	1.8	2.7	-2.7	0
e. significance	No	No	No		

BEFORE COST PER ACCIDENT CALCULATION

TYPE	NO. ACC.		COST/ACC		ACC. COST
Fatal	_____	×	_____	= $	_____
Injury	_____	×	_____	=	_____
F & I	_____	×	_____	=	_____
PDO	_____	×	_____	=	_____
TOTAL				$	

BEFORE COST/ACC (Tot. Acc. Cost ÷ Tot. Acc.) $ _____

A. ESTIMATED ANNUAL ACCIDENT COST WITH NO IMPROVEMENT:
ACC/YR 3.33 × VCF 1.1 × BEFORE COST/ACCIDENT 58,600 = $ 214,652

B. ESTIMATED ANNUAL ACCIDENT COST WITH PROPOSED IMPROVEMENT:
ACC/YR 3.33 × VCF 1.1 × (1.00 – .59 RF) × AVG. COST/ACC. 58,600 = $ 88,007

ESTIMATED ANNUAL SAFETY BENEFITS (A – B) = $126,645

PREPARER'S SIGNATURE: [signature]

DATE OF PREPARATION: 2/24/97

TE 204a (9/91)

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND SAFETY DIVISION

PROJECT BENEFIT AND COST SUMMARY

1. LOCATION

IDENT NO: 201653

☒ TOWN
☐ CITY OF Paris
☐ VILLAGE

Route No. or Street Name	State Highway No.	From or At Reference Marker
12	8277/8298	12 2604 / 1113
At Intersection With | Route No. or Street Name	State Highway No.	To Reference Marker

2. BENEFITS SUMMARY

ANNUAL SAFETY BENEFITS:	$ 126,645	(Attach Form TE 164a or other documentation.)
ANNUAL SERVICE BENEFITS:	$	(Explanation and calculation must be in project report.)
OTHER ANNUAL BENEFITS:	$	(State their nature under "comments" and provide an explanation in the project report.)
TOTAL ANNUAL BENEFITS:	$ 126,645	

3. COST SUMMARY

COST ITEM OR PROJECT ELEMENT	SERVICE LIFE (YEARS)	COST ($)	CRF @ 4%	ANNUALIZED COST ($)
Reconstruct highway on new alignment	20		0.07358	

ITEM SUBTOTAL _____ ANNUALIZED ITEM SUBTOTAL _____

PERCENT USED FOR CONTINGENCIES _____ TOTAL COST OF CONTINGENCIES _____ EQUIVALENT ANNUAL COST OF CONTINGENCIES _____

ANNUAL COST FOR SPECIAL MAINTENANCE, OPERATION, ENERGY

TOTAL CAPITAL COST [ ] TOTAL ANNUALIZED COST [ ]

Please keep in mind that any Recommendataion for Programming is based on the costs summarized here. Cost escalations during subsequent project development may necessitate the project's priority to be re-evaluated.

4. B/C RATIOS

SAFETY BCR = ANNUAL SAFETY BENEFIT / TOTAL ANNUAL COST = [ ]

SERVICE BCR = ANNUAL SERVICE BENEFIT / TOTAL ANNUAL COST = [ ]

TOTAL PROJECT BCR = TOTAL ANNUAL BENEFITS / TOTAL ANNUAL COSTS = [ ]

COMMENTS (Use additional sheets if necessary.)

For B/C=1: Cost = Total Annual Benefits / Capital Recovery Factor = 126,645 / 0.07358 = 1,721,100

PREPARER'S SIGNATURE: [signature]

DATE OF PREPARATION: 2/24/97