900 Northcrest Drive, PMB 16
Crescent City, California 95531
www.dnltc.org

Del Norte Local Transportation Commission

Tamera Leighton, Executive Director
Tamera@DNLTC.org
Desk: (707) 465-3878
Cell: (707) 218-6424

DEL NORTE LOCAL TRANSPORTATION COMMISSION
MEETING AGENDA: TUESDAY, JUNE 7, 2022 AT 3 PM
DEL NORTE COUNTY BOARD OF SUPERVISORS CHAMBERS
FLYNN ADMINISTRATIVE CENTER, 981 H STREET, CRESCENT CITY, CA

If you cannot attend in person, there is online access: https://media.co.del-norte.ca.us/

1. Call Meeting to Order

2. Pledge of Allegiance

3. Public comment period
   Anyone wishing to make public comments regarding matters either on or off the agenda and within the Commission's jurisdiction may do so at this time; however, the Commission is not permitted to act on non-agenda items.

4. Adjourn to the Policy Advisory Committee
   CONSENT AGENDA for POLICY and ADMINISTRATIVE

   Items are considered routine in nature and voted on in one motion: Consider public comments or requests to pull matters from the consent agenda for separate action.

   a) Minutes of May 3, 2022
      Staff recommendation: By consensus, accept minutes of May 3, 2022.

   b) Resolution to adopt 2022-23 Overall Work Program including legal counsel authorization to sign documents.
      Staff recommendation: By polled vote, approve resolution 2022 7 adopting the 2022-23 Overall Work Program including legal counsel authorization.

   c) Approve 2021-22 Overall Work Program Administrative Amendment 2
      Staff recommendation: By polled vote, adopt resolution 2022 8 approving Amendment 2 to the 2021-22 Overall Work Program.

   d) Transportation Development Act claim
      Staff recommendation: By polled vote, approve Redwood Coast Transit Authority Transportation Development Act claim and authorize the chair to sign.

      This authorization is usual and customary and happens on an annual basis in the June or July meeting.

   e) Adopt Transportation Development Act (TDA) Resolutions for 2022-23.
      Proposed action: By polled vote, adopt the following resolutions per the TDA fund estimate:
      i. 2022 9 Del Norte Local Transportation Commission resolution allocating funds to Redwood Coast Transit Authority for Operating Expenses.

ii. 2022 10 Del Norte Local Transportation Commission resolution allocating funds for administrative and planning purposes per the adopted Overall Work Program.
iii. 2022 11 Del Norte Local Transportation Commission resolution allocating funds for pedestrian and bicycle purposes.

f) Adopt Resolution 2022 12 authorizing the Executive Director to administer Planning, Programming and Monitoring funding.
Proposed action: Adopt Resolution 2022 12 authorizing the Executive Director and Legal Counsel to execute fund transfer agreements and all related documents with the State of California Department of Transportation for planning, programming and monitoring purposes.

POLICY and ADMINISTRATIVE

g) Triennial Performance Audit and response.
Staff recommendation: By consensus, accept Triennial Performance Audit and Response to Audit.

h) Discussion items
- US 199 at Elk Valley Crossroad
- Last Chance Grade
- Federal Highway Administration Pedestrian Lighting Primer

5. Policy Advisory Committee comments and reports

6. Action on the recommendations of the Policy Advisory Committee
Adjourn as the Policy Advisory Committee, reconvene as the Del Norte Local Transportation Commission, and by polled vote, approve and adopt the actions taken by the Policy Advisory Committee in the items listed above.

7. Adjourn until the regular meeting on Tuesday, July 5, 2022 at 3 p.m.

Anyone requiring a reasonable accommodation to participate in the meeting should contact the Executive Director Tamera Leighton, at (707) 465-3878, at least five (5) days prior to the meeting.

CONSENT AGENDA ITEM A-F

DATE: JUNE 7, 2022
TO: DEL NORTE LOCAL TRANSPORTATION COMMISSION
FROM: TAMERA LEIGHTON, EXECUTIVE DIRECTOR
SUBJECT: CONSENT AGENDA ITEMS

---

a) Minutes of May 3, 2022
Staff recommendation: By consensus, accept minutes of May 3, 2022.

b) Resolution to adopt Overall Work Program including legal counsel authorization to sign documents.
Staff recommendation: By polled vote, approve resolution 2022 7 adopting the 2022-23 Overall Work Program including legal counsel authorization.

Staff report: The Overall Work Program was adopted at the May 3 meeting, and it has not changed. This resolution simply adds legal counsel authority to sign mandatory related documents per counsel's request.

c) Approve 2021-22 Overall Work Program Administrative Amendment 2
Staff recommendation: By polled vote, adopt resolution 2022 8 approving Amendment 2 to the 2021-22 Overall Work Program.

Staff report: This is an administrative amendment to the current year Overall Work Program to correct an accounting error which underfunded the contract work for the GIS data regional mapping in Work Element A 4. This work is ongoing and additional work completed in the current year reduces the work planned for the next year.

d) Transportation Development Act claim
Staff recommendation: By polled vote, approve Redwood Coast Transit Authority Transportation Development Act claim and authorize the chair to sign.

This authorization is usual and customary and happens on an annual basis in the June or July meeting.

e) Adopt Transportation Development Act (TDA) Resolutions for 2022-23.
Proposed action: By polled vote, adopt the following resolutions per the TDA fund estimate:
    i. 2022 9 Del Norte Local Transportation Commission resolution allocating funds to Redwood Coast Transit Authority for Operating Expenses.

ii. 2022 10 Del Norte Local Transportation Commission resolution allocating funds for administrative and planning purposes per the adopted Overall Work Program.
iii. 2022 11 Del Norte Local Transportation Commission resolution allocating funds for pedestrian and bicycle purposes.

This authorization is usual and customary and happens on an annual basis in the June or July meeting.

f) Adopt Resolution 2022 12 authorizing the Executive Director to administer Planning, Programming and Monitoring funding.
Proposed action: Adopt Resolution 2022 12 authorizing the Executive Director and Legal Counsel to execute fund transfer agreements and all related documents with the State of California Department of Transportation for planning, programming and monitoring purposes.

This authorization is usual and customary and happens on an annual basis in the June or July meeting.

DEL NORTE TRANSPORTATION COMMISSION
REGULAR MEETING MINUTES: TUESDAY, MAY 3, 2022 AT 3 PM

Present:	Commissioner Ray Altman, City, Vice-Chair
	Commissioner Gerry Hemmingsen, County
	Commissioner Chris Howard, County
	Commissioner Blake Inscore, City
	Commissioner Darrin Short, County, Chair
	Tatiana Ahlstrand, Caltrans, Policy Advisory Member
Absent:	Commissioner Jason Greenough, City
Also Present:	Susan Brown, Rural Approaches
	Tom Fitzgerald, Deputy District 1 Director, Maintenance and Operations
	Tamara Leighton, Local Transportation Commission
	Elias Mavris, Public

1. **CALL MEETING TO ORDER**
   Chair Short called the meeting to order at 3:00 p.m.

2. **PLEDGE OF ALLEGIANCE**
   Chair Short led the Pledge of Allegiance.

3. **PUBLIC COMMENT PERIOD**
   Anyone wishing to make public comments regarding matters either on or off the agenda and within the Commission's jurisdiction may do so at this time; however, the Commission is not permitted to act on non-agenda items.
   The following person(s) addressed the Commission: Elias Mavris expressed concern about unlawful behavior at Point St. George including unlawful driving.

4. **PUBLIC HEARING**
   Conduct a public hearing to gather information on unmet transit needs.
   Tamera Leighton discussed the annual meeting with the Social Services Transportation Advisory Committee (SSTAC) regarding unmet transportation needs. The committee's recommended list is shorter than last year citing two unmet needs; Non-Emergency Medical Transportation And Comfortable and secure seating for waiting transit riders. Tamera also talked about the Health Care District's interest in supporting health care needs in the community, specifically healthcare appointments in other locations. Community members often need rides to appointments in Eureka or Medford and the District would like to partner with transit in some way to find a solution to getting folks to their out-of-town appointments. The project would start by planning and analyzing needs, best travel days, and doctor appointment coordination.
   Chair Short opened the Public Hearing at 3:07 pm and asked for public comments. No public comments were given. Chair Short closed the Public Hearing at 3:08 pm.

5. ADJOURN TO THE POLICY ADVISORY COMMITTEE

CONSENT AGENDA for POLICY and ADMINISTRATIVE
Items are considered routine in nature and voted on in one motion: Consider public comments or requests to pull matters from the consent agenda for separate action.

a) Minutes of April 5, 2022
Staff recommendation: By consensus, accept minutes of April 5, 2021.

b) 2022 Economic and Demographic Profile
Staff recommendation: By consensus, accept the 2022 Economic and Demographic Profile.

c) Unmet needs certification
Social Services Transportation Advisory Council and staff recommendation: By polled vote, adopt resolution 2022 6 certifying the unmet transit needs findings for 2021-22.
Public Comment: None
On a motion by Commissioner Hemmingsen, seconded by Commissioner Howard, and unanimously carried on a polled vote the Del Norte Local Transportation Commission approved items 5 a-c.

POLICY and ADMINISTRATIVE

d) Contract with Cholwell, Benz, and Hartwick for accounting and reporting services.
Staff recommendation: By polled vote, authorize executive director to sign a contract with Cholwell, Benz, and Hardwick for accounting and reporting services.
Tamera Leighton explained the Commission has been working with Cholwell, Benz, and Hartwick for several years and everything has been working well. She has reviewed other responses to the RFP and is hesitant to change accounting services. This firm also provides a staff accountant for the Commission's needs. They save the Commission a lot of time and effort and have always assisted in getting reporting done on time. Tamera wanted to make sure the Commission understood the difference in this request to continue with the current accounting firm.
Commissioner Hemmingson declared a conflict of interest and recused himself from the vote.
Public Comment: None
On a motion by Commissioner Howard, seconded by Commissioner Inscore, and unanimously carried on a polled vote the Del Norte Local Transportation Commission authorized executive director to sign a contract with Cholwell, Benz, and Hardwick for accounting and reporting services.

e) Approve 2022-23 Overall Work Program
Staff and TAC recommendation: By polled vote, adopt resolution 2022 5 approving the 2022-23 Overall Work Program.
Tamera Leighton relayed that the Overall Work Program has been discussed by the Technical Advisory Committee (TAC) and the Commission over the past couple of months and it is now recommended by the TAC and the Executive Director for approval by the Commission. Caltrans has submitted comments and responses to those comments are included in the document.
Public Comment: None

On a motion by Commissioner Hemmingsen, seconded by Commissioner Howard, and unanimously carried on a polled vote the Del Norte Local Transportation Commission adopted Resolution 2022 5 approving the 2022-23 Overall Work Program

e) DISCUSSION ITEMS

- US 199 at Elk Valley Crossroad – Tamera Leighton did not have anything new to report. Conversation with Caltrans is ongoing. The next step would be a Project Initiation Document (PID) which may happen in July. The next steps would be project design, PID approval, locating funding, and the start of the project.
- US 199 collision and recovery update at Post mile 11 – Tom Fitzgerald, Deputy Director District 1, shared information about the April 28th accident. A transport truck carrying asphalt oil, which is a hot binder, lost his trailer near the Dr. Fine Bridge. The tank ruptured and released the oil. The driver left the scene and was later caught in Hiouchi. He was arrested for Driving Under the Influence. It is reported that up to 500 gallons of the spilled material was released into Smith River, and has cooled into a solid mass. The spillage into the river is a big concern. Tom reported that it will take weeks to clean up the material. There have been efforts from volunteers to find the material in the river. NRC trucking company should be hiring teams to clean the river and the road surface as well. It is reported that some boaters found some of the mass submerged at milepost 10. The Commissioners had several questions regarding clean-up and Tom responded expectations for clean-up would include removing or replacing rock edges, cleaning up the river, restoring the road surface, trace chemicals in the water, and whatever else may have been affected by the spill. Tom also reported that communication and response time for this incident has been good, and partnerships with OES, CHP, and Fish & Game have been good.
- Last Chance Grade – Tamera Leighton referred the Commissioners to the update in the packet adding there is a change of date for the meeting with Senator Mike McGuire.

6. POLICY ADVISORY COMMITTEE COMMENTS AND REPORTS

No reports.

7. ACTION ON THE RECOMMENDATIONS OF THE POLICY ADVISORY COMMITTEE

Adjourn as the Policy Advisory Committee, reconvene as the Del Norte Local Transportation Commission, and by polled vote, approve and adopt the actions taken by the Policy Advisory Committee in the items listed above.
Public Comment: None

On a motion by Commissioner Howard, seconded by Commissioner Hemmingsen, and unanimously carried on a polled vote the Del Norte Local Transportation Commission approved items 5 a-e.

8. ADJOURN UNTIL THE REGULAR MEETING SCHEDULED ON TUESDAY, JUNE 7, 2022 AT 3:00 P.M.

With no further business before the Commission, Chair Short adjourned the regular meeting at 3:40 p.m., until the next regularly scheduled meeting on Tuesday, June 7, 2022, at 3:00 p.m.

Respectfully submitted

_____

Tamera Leighton, Executive Director

RESOLUTION 2022 7

DEL NORTE LOCAL TRANSPORTATION COMMISSION
RESOLUTION ADOPTING THE 2022-23 OVERALL WORK PROGRAM

WHEREAS, the Del Norte Local Transportation Commission, as the Del Norte Regional Transportation Planning Agency, has the responsibility of developing, approving and managing an Overall Work Program annually; and

WHEREAS, the Del Norte Local Transportation Commission, through its planning process including its regional transportation plan, has identified the region's significant transportation needs; and

WHEREAS, as part of the management of its annual Overall Work Program the Del Norte Local Transportation Commission has identified projects for the 2022-23 year.

WHEREAS, the Fiscal Year (FY) 2022/2023 Overall Work Program, Budget and Goals and Objectives (OWP) is the primary management tool for DNLTC, identifies the activities and a schedule of work for regional transportation planning in Del Norte County, and is a requirement of the agreement between the DNLTC and Caltrans; and

NOW, THEREFORE, BE IT RESOLVED that the Del Norte Local Transportation Commission hereby adopt the 2022-23 Overall Work Program and Budget and authorizes the Executive Director, Chairperson, and Legal Counsel to execute all applications, certifications and assurances, administrative amendments, and other related documents.

PASSED AND ADOPTED by the Del Norte Local Transportation Commission of Del Norte County, State of California on the 7th day of June 2022 by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____
Darrin Short, Chair
Del Norte Local Transportation Commission

ATTEST:

_____
Tamera Leighton, Executive Director
Del Norte Local Transportation Commission

RESOLUTION NO. 2022 8

DEL NORTE LOCAL TRANSPORTATION COMMISSION RESOLUTION APPROVING AMENDMENT #2 OF THE 2021-22 OVERALL WORK PROGRAM

WHEREAS, the Del Norte Local Transportation Commission in its official capacity as the designated Regional Transportation Planning Agency, hereafter referred to as the RTPA, is responsible for the planning, allocating and programming of funds; and

WHEREAS, the 2021-22 Overall Work Program (OWP) is the primary management tool for the Del Norte Local Transportation Commission, identifies the activities and a schedule of work for regional transportation planning in Del Norte County, and is a requirement of the Memorandum of Understanding between Del Norte Local Transportation Commission and the California Department of Transportation; and

WHEREAS, the Del Norte Local Transportation Commission adopted the 2021-22 OWP on April 6, 2021 meeting, and approved Amendment 1 on October 5, 2021; and

WHEREAS, the work element, expenditure detail and revenue summary are attached to this resolution; and

WHEREAS, Amendment #2 of the 2021-22 OWP makes the following changes:

Work Element:	Purpose of change:	Action taken:
A 4	Adds funding	Adds funding of $22,000 in Transportation Development Act funding to accommodate more mapping topics.

PASSED AND ADOPTED by the Del Norte Local Transportation Commission, a Regional Transportation Planning Agency of the State of California on the 7th day of June 2022 by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____
Darrin Short, Chair
Del Norte Local Transportation Commission

ATTEST:

_____
Tamera Leighton, Executive Director
Del Norte Local Transportation Commission

WORK ELEMENT A Long Range Planning Coordination

2021-22 Overall Work Program Amendment 2

Expenditures		Revenue by Fund Source			
Staff Allocations and Funding Requirements					
DNLTC	**Amount**	**RPA**	**STIP/PPM**	**TDA**	**Other**
DNLTC Staff Services	**$ 46,000.00**	46,000.00		$ -	$ -
Consultant	**$ 104,369.50**	$ 104,369.50	$ -	$ 22,000.00	$ -
TOTAL	**$ 172,369.50**	**$ 150,369.50**	**$ -**	**$ 22,000.00**	**$ -**

Note: All accounting and reporting is at the product level and all consultant costs are limited by contract.

Objective

To collaborate with various agencies such as local, regional, state agencies and Tribal governments to discuss and coordinate issues related to transportation planning. Carry forward the DNLTC regional planning process that is cooperative, comprehensive, and promotes a shared regional vision. Provide information to the region to help inform decision-making that impacts transportation-

Discussion

This work element provides the resources for staff and Commission members to participate in the efforts and activities to develop plans and programs that represent the transportation needs of the region as established in the 2020 Regional Transportation Plan. This work represents ongoing efforts for Del Norte's representation and participation in developing planning documents that impact the region. Responsible party: DNLTC staff services.

Previous Accomplishments

- Regular Participation in the US Highway 197/199 Project Delivery Team
- Commented on STIP and SHOPP projects for Caltrans and California Transportation Commission
- Participated in Last Chance Grade Project Initiation Delivery and Economic Impact of Closure studies
- Support the Demographic and Economic Profile for Del Norte County
- 2020 Regional Transportation Plan and Environmental Documents
- Advocated for the US Highway 101 urban area pedestrian improvement projects.
- Participated in California Active Transportation Plan
- Partnering with Elk Valley Rancheria to fund the Humboldt Road/Sandmine Roundabout
- Participating in Dr. Fine Bridge replacement project delivery team meetings.
- Participating in Regional Transportation Planning Agency meetings that establish programs impacting the Del Norte region.

Product 1:	**Regional Transportation Plan Development**		
Task/Activity		**Product**	**Schedule**
1	Assess regional priorities and participate in the system planning process on an ongoing basis as initiated by Caltrans. Comment on Caltrans policies, procedures and mandates under development.	Meeting notes, agendas, reports, comment letters	As needed
2	Prepare for and attend Regional Transportation Planning Agency executive director meetings as requested by Caltrans District 1 to comment on issues of significance to the District 1 region and to coordinate with colleagues in District 1.	Meeting notes, agendas, and comment letters	Quarterly or as scheduled by Caltrans D1
3	Participate in implementing federal legislation and funding that supports rural transportation and meets the needs of the DNLTC 2020 Regional Transportation Plan by whatever method of participation becomes available such as state meetings, webinars and conference calls.	Meeting notes, agendas, and comment letters	As needed and relevant to the Del Norte region
4	Coordinate and consult with Tribal governments as requested, including but not limited to Tribal long range planning. This work supports common goals including the Smith River Rancheria for the US Highway 101 corridor, the Elk Valley Rancheria on US Highway 101 trail crossing, and Yurok Tribe projects.	Meeting notes, agendas, and comment letters	As needed, approximately six times per year.
5	Engage and coordinate the goods movement industry (Lily bulb growers, dairy/cheese, solid waste management, wood products, etc.) in regional transportation planning. Track efforts to improve goods movement on the interregional US Highway 101 and 199 corridors. Support policies, programs and actions that provide goods movement throughout the Northcoast region.	Meeting notes, agendas, and comment letters	As needed, approximately quarterly.

6	Participate in transportation safety and security planning activities to support the RTP, including attending local and regional meetings as requested by the Del Norte Office of Emergency Services.	Meeting notes	As needed
7	Participate in working group activities, review State policies, and review the work to date in the State to assess the need for Zero Emissions Vehicle readiness planning.	Meeting notes, agendas, and work scoping.	Monthly or as needed
8	Support Border Coast Regional Airport Authority activities that increase transportation options with a focus on access to the airport including multi-modal access. Attend Boarder Coast Regional Airport Authority meetings as topics of relevance arise.	Meeting notes, agendas, and comment letters	As needed
9	Post transportation articles and documents to the website that inform the public regarding planning activities that support the Regional Transportation Plan.	Up-to-date website	Monthly or as needed

Product 1 Estimate	Amount	RPA	STIP/PPM	RSTP
DNLTC Staff Services	$ 34,000	$ 34,000	$ -	$ -
Consultant	$ -	$ -	$ -	$ -
Total	$ 34,000	$ 34,000	$ -	$ -

Product 2: Last Chance Grade Update

Advocate for long term solutions to the instability of Last Chance Grade on US Highway 101, including reviewing and commenting on Caltrans documents and disseminating community information.

Task/Activity		Products	Schedule
1	Public information available on website.	Updated website	July - June
2	Advocate for long term solutions to the instability of Last Chance Grade on US Highway 101 by participating in regional and State meetings to support the project. This work supports Caltrans' efforts and informs the Regional Transportation Plan.	Meeting comments as appropriate.	July - June

Product 2 Estimate	Amount	RPA	STIP/PPM	RSTP
DNLTC Staff Services	$ 5,000	$ 5,000	$-	$-
Consultant and Printing	$ -	$ -		$ -
Total	$ 5,000	$ 5,000	$ -	$ -

Product 3: 2022 Economic and Demographic Profile

With the assistance of the Center of Economic Development, CSU Chico, provide the 2022 Economic and Demographic Profile to inform the Regional Transportation Plan and other planning documents.

Task/Activity		Products	Schedule
1	Contract management for 2021 Economic and Demographic Profile	Executed contract	July - November
2	Develop the 2021 Databook, including chapter development, document review, final approval and post to website.	2021 Databook	February - May

Product 2 Estimate	Amount	RPA	STIP/PPM	RSTP
DNLTC Staff Services	$ 3,000	$ 3,000	$ -	$ -
Consultant	$ -	$ 5,900	$ -	$ -
Total	$ 3,000	$ 8,900	$ -	$ -

Product 4 Regional Mapping

The scope of work begins with County and City maintained mileage mapping, which is a requirement, and it can be expanded into many areas to more accurately and efficiently inform planning processes. The shapefile mapping will inform many regional planning documents, including the Regional Transportation Plan. This work will extend into the 2021-22 year based on the consultant proposal and funding availability. Priority areas include:

County maintained mileage: Completed in 2020-21
City maintained mileage: Completed in 2020-21
Bus Routes, stops and shelters: Completed in 2020-21

1. Elk Valley Rancheria Indian Reservation Roads.
2. Resighini Rancheria Indian Reservation Roads.
3. Tolowa Dee-ni Nation Indian Reservation Roads.
4. Yurok Tribe Indian Reservation Roads.
5. Right-of-way references for Minor Arterials roads.
6. Right-of-way references for Major Collectors roads.
7. Right-of-way reference for Minor Collectors roads.
8. Right-of-way reference for Local roads.
9. Bike routes and lanes.
10. Local trails (no state or federal).
11. Call box system mapping.
12. Transit service area analysis and basemap.
13. Transit ADA service area.
14. Cartographic products to show routes/stops.
15. Sidewalks.
16. Off Highway Vehicle (OHV) use areas.
17. Drainage facilities within right-of-way.
18. Driveways.
19. Curb ramps.
20. Centralized clearing house for regional transportation related GIS information.
21. Pavement Condition Index.
22. Road maintenance areas.
23. Vehicle Miles Traveled (SB 743) encumbrances

Task/Activity		Products	Schedule
1	Continue GIS data sets based on the priorities established by partner agencies: Local bridges, Tribal reservation roads, bike routes and lanes, Rights-of-Way along frontage parcels, local trails, call box system.	Downloadable files to partner agencies	July - October
2	Contract administration and closeout.	Invoice processing, closeout.	July - December

Product 1 Estimate	Amount	RPA	STIP/PPM	TDA
Staff	$ 4,000	$ 4,000	$ -	
Consultant	$ 120,470	$ 98,470	$ -	$ 22,000
Total	$ 124,470	$ 102,470	$ -	$ 22,000

Del Norte Local Transportation Commission

Overall Work Program Expenditure Detail

2021-22 Overall Work Program Amendment 2

Work Element	Description	Funding Sources	DNLTC	Consultant/ Other
A	Long Range Planning Coordination	RPA	$ 46,000	$ 104,370
		PPM		$ -
		TDA	$ -	$ 22,000
		Other/RSTP	$ -	$ -
Total A	**$172,370**		**$46,000**	**$126,370**
B	Overall Work Program Development	RPA	$ 18,000	$ 10,000
		PPM	$ -	$ -
		TDA	$ -	$ 10,000
		Other	$ -	$ -
Total B	**$38,000**		**$ 18,000**	**$ 20,000**
C	Public Participation and Information Dissemination	RPA	$ 35,000	$ 35,000
		PPM	$ -	$ 2,500
		TDA	$ -	$ 10,000
		Other:	$ -	$ -
Total C	**$82,500**		**$ 35,000**	**$ 47,500**
D	Regional Transportation Improvement Program (RTIP) Development	RPA	$ -	$ -
		PPM	$ 8,000	$ 50,000
		TDA	$ -	$ -
		Other	$ -	$ -
Total D	**$58,000**		**$ 8,000**	**$ 50,000**
E	Transportation Development Act Administration and Fiscal Management	RPA		$ -
		PPM	$ -	$ -
		TDA	$ 28,500	$ 50,500
		Other	$ -	$ -
Total E	**$79,000**		**$ 28,500**	**$ 50,500**
F	SAFE: Service Authority for Freeway Emergencies	RPA	$ -	$ -
		PPM	$ -	$ -
		TDA	$ -	$ -
		SAFE	$ 6,000	$ 20,000
Total F	**$26,000**		**$ 6,000**	**$ 20,000**
G	Safety & Security Planning	RPA	$ 2,000	$ 12,000
		PPM	$-	$ -
		TDA	$-	$ -
		Other:	$ -	$ -
Total G	**$14,000**		**$ 2,000**	**$ 12,000**
H	Transit Planning	RPA	$ 2,000	$ 10,000
		PPM		$ 20,000
		TDA	$ -	$ -
		Other:	$ -	$ -
Total H	**$32,000**		**$ 2,000**	**$ 30,000**

Del Norte Local Transportation Commission
Overall Work Program Revenue Summary
2021-22 Overall Work Program Amendment 2

Work Element	Description	RPA	TDA	STIP PPM	SAFE/RSTP/ RPA Grant	Work Element Total
A	**Long Range Planning Coordination**					
Product 1	Regional Transportation Plan Developmen	$ 34,000.00	$ -	$ -	$ -	
Product 2	Last Chance Grade Update	$ 5,000.00		$ -		
Product 3	2022 Economic and Demographic Profile	$ 8,900.00	$ -			
Product 4	Regional Mapping	$ 102,469.50	$ 22,000.00			
	Total Work Element A	**$ 150,369.50**	**$ 22,000.00**	**$ -**	**$ -**	**$ 172,369.50**
B	**Overall Work Program Development**					
Product 1	Overall Work Program	$ 28,000.00	$ 10,000.00	$ -	$ -	
	Total Work Element B	**$ 28,000.00**	**$ 10,000.00**	**$ -**	**$ -**	**$ 38,000.00**
C	**Information Dissemination**					
Product 1	Commission	$ 28,000.00	$ -	$ -	$ -	
Product 2	Partnerships and Planning Agreements	$ 25,000.00	$ 10,000.00	$ 2,500.00	$ -	
Product 3	Website & Crowdsource Information	$ 17,000.00				
	Total Work Element C	**$ 70,000.00**	**$ 10,000.00**	**$ 2,500.00**	**$ -**	**$ 82,500.00**
D	**Regional Transportation Improvement Program (RTIP) Development**					
Product 1	Develop and Maintain TIP	$ -	$ -	$ 8,000.00	$ -	
Product 2	Project Representation	$ -	$ -	$ 50,000.00	$ -	
	Total Work Element D	**$ -**	**$ -**	**$ 58,000.00**	**$ -**	**$ 58,000.00**
E	**Transportation Development Act Administration and Fiscal Management**					
Product 1	Office Operations	$ -	$ 20,500.00	$ -	$ -	
Product 2	Fiscal Management	$ -	$ 56,000.00	$ -	$ -	
Product 3	SSTAC Support	$ -	$ 2,500.00	$ -	$ -	
	Total Work Element E	**$ -**	**$ 79,000.00**	**$ -**	**$ -**	**$ 79,000.00**
F	**SAFE: Service Authority for Freeway Emergencies**					
Product 1	Call Box System Maintenance & Reporting	$ -	$ -	$ -	$ 26,000.00	
	Total Work Element F	**$ -**	**$ -**	**$ -**	**$ 26,000.00**	**$ 26,000.00**

G	Safety & Security Planning					
Product 1	Local Roadway Safety Plan Match	$ 14,000.00				
	Total Work Element G	**$ 14,000.00**	**$ -**	**$ -**	**$ -**	**$ 14,000.00**

H	Transit Planning					
Product 1	Transit Hub Planning & Development	$ 12,000.00		$ 20,000.00		
	Total Work Element H	**$ 12,000.00**		**$ 20,000.00**		**$ 32,000.00**

TOTAL LABOR AND EXPENSES	**$ 274,369.50**	**$ 121,000.00**	**$ 80,500.00**	**$ 26,000.00**	**$ 501,869.50**

Transportation Development Act
Redwood Coast Transit Authority

Del Norte Local Transportation Commission
900 Northcrest Drive, PMB 16
Crescent City, CA 95531
(707) 465-3878

TRANSPORTATION DEVELOPMENT ACT FUNDS
CLAIM FORMS: DUE JUNE 30, 2022

Please check the items that are either included with the submitted Transportation Development Act claim package or are on file at Del Norte Local Transportation Commission and return this checklist with the Transportation Development Act claim.

ITEM	SUBMITTED
a) TDA-1 Annual Transportation Development Act Claim	X
b) TDA-2 Project & Financial Plan (for the fiscal year of the claim)	X
c) TDA-3 TDA Funds – Current Status	X
d) TDA-4 Statement of Conformance	X
e) Resolution by governing body that authorizes filing the claim	X
f) CHP Safety Compliance Report	X
g) Statement of projected or estimated revenues and expenditures for prior fiscal year	X
h) Adopted or proposed budget for the fiscal year of the claim	X
i) Signed copy of transit service contract	X
j) Documentation of eligibility under TDA efficiency criteria	X
k) Standard Assurances for Applicants	X

TRANSPORTATON DEVELOPMENT ACT FUNDS
ANNUAL TRANSPORTATION CLAIM

TO: Del Norte Local Transportation Commission
900 Northcrest Drive, PMB 16
Crescent City, CA 95531

FROM: Claimant: Redwood Coast Transit Authority

Address: 900 Northcrest Drive #134

City: Crescent City, CA ZIP: 95531

Contact Person: Joseph Rye Phone: 707-235-3078

The Redwood Coast Transit Authority hereby requests, in accordance with TDA article 4 Section 99260(b) and applicable rules and regulations, that its Local Transportation Fund annual transportation claim be approved in the amount of $1,005,486 for fiscal year 2022-2023 be drawn from the local transportation fund of the County of Del Norte for the purposes and amounts shown on the attached statements.

Approval of the claim and payment by the County Auditor of this application is subject to such monies being on hand and available for distribution, and to the provision that such monies will be used only accordance with terms of the allocation instructions.

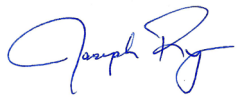
APPROVED:

By _____
Signature

Chair _____
Del Norte Local Transportation Commission

Approval Date _____

SUBMITTED:



By _ _
Claimant's Signature

Title General Manager_
Redwood Coast Transit Authority

Submittal Date _6/30/2022___

TRANSPORTATON DEVELOPMENT ACT FUNDS
ANNUAL PROJECT AND FINANCIAL PLAN

Briefly describe all proposed projects and indicate proposed expenditures of your jurisdiction for the ensuing fiscal year for public transportation operating and capital expenditures, right-of-way acquisition and construction of local street and roads and facilities for the exclusive use by pedestrians and bicycles. Give each project a title and number in sequence.

PROJECT TITLE: RCTA Operating Project #1

BRIEF DESCRIPTION: Operations of RCTA fixed routes, inter-city routes, and Dial-A-Ride (including ADA paratransit) service for Del Norte County

SECTION & SUBSECTION OF ACT: 99262

FUNDING SOURCE AND

1. LTF (SB325) $955,212	4. FARES $70,000
2. STAF $265,609	5. OTHER $0
3. SECTION 5311 $513,750	6. TOTAL $1,804,571

PROJECT COST BY FUNDING SOURCE

1. LTF (SB325) $955,212	4. FARES $70,000
2. STAF $265,609	5. OTHER $0
3. SECTION 5311 $513,750	6. TOTAL $1,804,571

CLAIMANT TOTAL PROPOSED EXPENDITURES: $1,804,571

TDA FUNDS CLAIM: (LTF AND STAF) $1,220,821

TRANSPORTATON DEVELOPMENT ACT FUNDS
ANNUAL PROJECT AND FINANCIAL PLAN

Briefly describe all proposed projects and indicate proposed expenditures of your jurisdiction for the ensuing fiscal year for public transportation operating and capital expenditures, right-of-way acquisition and construction of local street and roads and facilities for the exclusive use by pedestrians and bicycles. Give each project a title and number in sequence.

PROJECT TITLE: RCTA CTSA Operating Project #2

BRIEF DESCRIPTION: Operations of RCTA CTSA Projects, including ADA Eligibility Determination, Travel Training, and planning/launch of Health/Shopping Bus to Medford

SECTION & SUBSECTION OF ACT: 99262

FUNDING SOURCE AND

1. LTF (SB325) $50,274	4. FARES $0
2. STAF $0	5. OTHER $0
3. SECTION 5311 $0	6. TOTAL $50,274

PROJECT COST BY FUNDING SOURCE

1. LTF (SB325) $50,274	4. FARES $0
2. STAF $0	5. OTHER $0
3. SECTION 5311 $0	6. TOTAL $50,274

CLAIMANT TOTAL PROPOSED EXPENDITURES: $50,274

TDA FUNDS CLAIM: (LTF-CTSA) $50,274

TRANSPORTATON DEVELOPMENT ACT FUNDS
ANNUAL PROJECT AND FINANCIAL PLAN

Briefly describe all proposed projects and indicate proposed expenditures of your jurisdiction for the ensuing fiscal year for public transportation operating and capital expenditures, right-of-way acquisition and construction of local street and roads and facilities for the exclusive use by pedestrians and bicycles. Give each project a title and number in sequence.

PROJECT TITLE: RCTA Capital,Project #3

BRIEF DESCRIPTION: Capital projects for RCTA fixed routes, inter-city routes, and Dial-A-Ride (including ADA paratransit) services for Del Norte County

SECTION & SUBSECTION OF ACT: 99262

FUNDING SOURCE AND

1. LTF (SB325) $0	4. FARES $0
2. STA $0	5. OTHER FTA (5339, 5310) $336,700 PTMISEA $554,000, SB-1-SGR $43,487
3. SECTION 5311 $0	6. TOTAL $934,187

PROJECT COST BY FUNDING SOURCE

1. LTF (SB325) $0	4. FARES $0
2. STA $0	5. OTHER FTA (5339, 5310) $336,700 PTMISEA $554,000, SB-1-SGR $43,487
3. SECTION 5311 $0	6. TOTAL $934,187

CLAIMANT TOTAL PROPOSED EXPENDITURES: $934,187

TDA FUNDS CLAIM: (LTF) $0

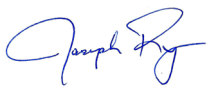
TRANSPORTATON DEVELOPMENT ACT FUNDS
CURRENT STATUS

Briefly describe the current fiscal year annual Transportation Claim including: a) Project progress to date; b) Income and expenditures to date. In addition, provide a projection of a) and b) by July 1.

Please see the attached Redwood Coast Transit Authority FY 2021-22 Budget – Amendment #1, dated May 23, 2022.

The report provides a summary of the performance of the Redwood Coast Transit Authority system and is a year-to-date financial status report. The attached Fiscal Year 2022-23 Budget includes a summary of projected Fiscal Year 2021-22 year-end revenues and expenditures.

CERTIFIED:

BY: 

Title: General Manager

Date: June 30, 2022

TRANSPORTATON DEVELOPMENT ACT FUNDS
STATEMENT OF CONFORMANCE

The Redwood Coast Transit Authority (Claimant) hereby certifies that the Local Transportation Fund Annual Transportation Claim for fiscal year 2022-23 in the amount of $955,212, plus $50,274 for CTSA Activities conforms with the requirements of TDA Article 4, Chapter 1400, Section 99260, and applicable rules and regulations.

CERTIFIED:

By: __

Title: General Manager

Date: June 30, 2022

STATE OF CALIFORNIA
DEPARTMENT OF CALIFORNIA HIGHWAY PATROL

SAFETY COMPLIANCE REPORT/ TERMINAL RECORD UPDATE

CHP 343 (Rev. 12-17) OPI 062

NEW TERMINAL INFORMATION	CA NUMBER	FILE CODE NUMBER	COUNTY CODE	BED
☐ Yes ☒ No	100967	352297	8	
TERMINAL TYPE	**CODE**	**OTHER PROGRAM(S)**	**LOCATION CODE**	**SUBAREA**
☐ Truck ☒ Bus ☐ Mod Limo	B		120	N89

CARRIER LEGAL NAME	TERMINAL NAME (IF DIFFERENT)	TELEPHONE NUMBER (W/ AREA CODE)
First Transit Inc		(707) 464-6400

TERMINAL STREET ADDRESS (NUMBER, STREET, CITY, ZIP CODE)
140 Williams Dr C: :scent City Ca 95531

MAILING ADDRESS (NUMBER, STREET, CITY, ZIP CODE) (IF DIFFERENT FROM ABOVE)	INSPECTION LOCATION (NUMBER, STREET, CITY OR COUNTY)
Same	

LICENSE, FLEET AND TERMINAL INFORMATION

HM LIC. NO.	HWT REG. NO.	IMS LIC. NO.	TRUCKS AND TYPES	TRAILERS AND TYPES	PASS VEHS BY TYPE	DRIVERS	BIT FLEET SIZE
					I 12 II Mod Limo	6	Powered
EXP. DATE	**EXP. DATE**	**EXP. DATE**	**REG. CT.**	**HW VEH.**	**HW CONT.**	**PPB/CSAT**	**Towed**
						☐ Yes ☒ No ☐ N/A	

TERMINALS IDENTIFIED IN SECTION 34515(b) CVC	FILE CODE NUMBERS OF TERMINALS INCLUDED IN INSPECTION AS A RESULT OF SECTION 34515(b) CVC
☐ Yes ☒ No	

EMERGENCY CONTACTS *(In Calling Order of Preference)*

EMERGENCY CONTACT (NAME)	DAY TELEPHONE NO. (W/ AREA CODE)	NIGHT TELEPHONE NO. (W/ AREA CODE)
Fernando Hernandez	(707) 464-6400	(707) 954-1692
Nick West	(707) 464-6400	(707) 951-7066

ESTIMATED CALIFORNIA MILEAGE FOR THIS TERMINAL FOR LAST YEAR [2021]

A	B	C	D	E	F	G	H	I
☐ UNDER 15,000	☐ 15,001 — 50,000	☐ 50,001 — 100,000	☒ 100,001 — 500,000	☐ 500,001 — 1,000,000	☐ 1,000,001 — 2,000,000	☐ 2,000,001 — 5,000,000	☐ 5,000,001 — 10,000,000	☐ MORE THAN 10,000,000

OPERATING AUTHORITIES OR PERMITS

PUC	☐ T	☒ TCP ☐ PSC 24770	MOTOR CARRIER OF PROPERTY PERMIT ACTIVE ☐ Yes ☐ No ☒ N/A	IMS FITNESS EVALUATION ☐ Yes ☒ No
USDOT	USDOT NUMBER 1002211	☒ MC ☐ MX 576222	☐ MC ☐ MX	REASON FOR INSPECTION: Annual Bus Terminal Inspection

INSPECTION RATINGS: S = Satisfactory U = Unsatisfactory C = Conditional UR = Unrated N/A = Not Applicable

INSPECTION FINDINGS		MAINTENANCE PROGRAM	DRIVER RECORDS	REG. EQUIPMENT	HAZARDOUS MATERIALS	TERMINAL
REQUIREMENTS	**VIOL**					
MAINTENANCE PROGRAM		1 S 2 S 3 S 4 S	1 S 2 S 3 S 4 S	1 S 2 S 3 S 4 S	1 N/A 2 N/A 3 N/A 4 N/A	1 S 2 S 3 S 4 S
DRIVER RECORDS		No. 3 Time 1.0	No. 6 Time 1.5	No. 4 Time 4.0	TIME	TOTAL TIME 6.6
DRIVER HOURS		HAZARDOUS MATERIALS ☒ No H/M Transported ☐ No H/M violations noted		CONTAINERS/TANKS No. Time	VEHICLES PLACED OUT-OF-SERVICE Vehicles Units	
BRAKES		REMARKS				
LAMPS & SIGNALS						
CONNECTING DEVICES						
STEERING & SUSPENSION						
TIRES & WHEELS						
EQUIPMENT REQUIREMENTS	5					
CONTAINERS & TANKS						
HAZARDOUS MATERIALS						

INSPECTION TYPE	NON-BIT	CPSS	CHP 345	CHP 100D COL.	INSPECTION DATE(S)	TIME IN	TIME OUT
☐ I ☐ R	☐	☐ Yes ☒ No	☐	7	4-13-2022		

INSPECTED BY (NAME(S))	ID NUMBER(S)	SUSPENSE DATE
RICK STEELE	A12843	☒ Auto ☐ None

MOTOR CARRIER CERTIFICATION

I hereby certify that all violations described hereon and recorded on the attached pages (2 through 10), will be corrected in accordance with applicable provisions of the Calif nia Vehicle Code and the California Code of Regulations. I understand that I may request a review of an unsatisfactory rating by contacting the Motor Carrier Safety Unit Supervisor at 530-242-4357 within 5 business days of the rating.

CURRENT TERMINAL RATING	CARRIER REPRESENTATIVE'S SIGNATURE	DATE
SATISFACTORY		04/13/2022

CARRIER REPRESENTATIVE'S PRINTED NAME	TITLE	DRIVER LICENSE NUMBER	STATE
Fernando Hernandez	General Manager		

California Highway Patrol

US DOT #	Legal: FIRST TRANSIT INC
1002211	Operating (DBA):

MC/MX #: 576222 **State #:** 100967 **Federal Tax ID:** 23-1716119 (EIN)

Review Type: Non-ratable Review - Special Study

Scope: Terminal **Location of Review/Audit:** Company facility in the U. S. **Territory:**

Operation Types	Interstate	Intrastate
Carrier:	Non-HM	Non-HM
Shipper:	N/A	N/A
Cargo Tank:	N/A	

Business: Corporation

Gross Revenue: **for year ending:**

Company Physical Address:

600 VINE STREET
CINCINNATI, OH 45202-2400

Contact Name: Fernando Hernadez
Phone numbers: **(1)** 707-464-6400 **(2)** **Fax**
E-Mail Address:

Company Mailing Address:

600 VINE STREET
CINCINNATI, OH 45202-2400

Carrier Classification

Authorized for Hire	Private Passenger, Business	Local Government

Cargo Classification

Passengers

Equipment

	Owned	Term Leased	Trip Leased	Owned	Term Leased	Trip Leased
Minibus, 16+	12	0	0			

Power units used in the U.S.: 12
Percentage of time used in the U.S.: 100

Does carrier transport placardable quantities of HM? No
Is an HM Permit required? N/A

Driver Information

	Inter	Intra
< 100 Miles:		6
>= 100 Miles:		

Average trip leased drivers/month: 0
Total Drivers: 6
CDL Drivers: 6

FIRST TRANSIT INC - Terminal U.S. DOT #: 1002211	State #: 100967	Review Date: 04/13/2022

Part A

QUESTIONS regarding this report may be directed to Motor Carrier Safety Unit at

2485 Sonoma Street
Redding, CA 96001
(530) 242- 4300

This TERMINAL REVIEW deals only with safety compliance at this terminal.

Person(s) Interviewed

Name: Fernando Hernadez **Title:** General Mamager

Name: Nick Wes **Title:** Maintenance Manager

FIRST TRANSIT INC - Terminal
U.S. DOT #: 1002211
State #: 100967
Review Date: 04/13/2022

Part B Violations

Safety Fitness Rating Information:		
Total Miles Operated	266,372	
Recordable Accidents	0	

OOS Vehicle (CR): 0
Number of Vehicle Inspected (CR): 4
OOS Vehicle (MCMIS): 0
Number of Vehicles Inspected (MCMIS): 0

Your proposed safety rating is :

This Review is not Rated.

	FIRST TRANSIT INC - Terminal U.S. DOT #: 1002211 State #: 100967	Review Date: 04/13/2022

Part B Requirements and/or Recommendations

1. Please continue to comply with all statutory and regulatory requirements.

FIRST TRANSIT INC - Terminal
U.S. DOT #: 1002211
State #: 100967
Review Date: 04/13/2022

Part C

Reason for Review: Other — Annual Bus Terminal
Planned Action: Compliance Monitoring

Parts Reviewed Certification:
325 382 383 387 390 391 392 393 395 396 397 398 399 171 172 173 177 178 180

Prior Reviews
3/17/2022
3/16/2022
2/25/2022

Prior Prosecutions
1/30/2014

Reason not Rated: Special Study
Study Code: CA

Unsat/Unfit Information

Is the motor carrier of passengers subject to the safety fitness procedures contained in 49 CFR part 385 subpart A, AND does it transport passengers in a commercial motor vehicle? No

Does carrier transport placardable quantities of hazardous materials?

Unsat/Unfit rule: Not Applicable

Corporate Contact: Fernando Hernadez
Corporate Contact Title: General Mamager

Special Study Information:

Remarks:
Terminal Name: First Transit CA # - 100967
Terminal Address: 140 William Dr Crescent City, CA 95531 FCN - 352297

Rating Information:
In accordance with 13 CCR 1233, this terminal has been rated Satisfactory at this time.

MAINTENANCE PROGRAM VIOLATIONS:
None noted

DRIVER RECORDS VIOLATIONS:
None noted

HOURS OF SERVICE VIOLATIONS:
None noted

ADDITIONAL INFORMATION:
Discussed ELDT requirements with carrier representatives.

Upload Authorized:	**Yes**	**No**	
Authorized by:			**Date:**
Uploaded:	**Yes**	**No**	**Failure Code:**
Verified by:			**Date:**

California Highway Patrol
2485 Sonoma Street
Redding, CA 96001
Phone: (530) 242-4300
Internationally Accredited Agency CHP407F/343A

Report Number: CAN9WR000698
Inspection Date: 04/13/2022
Start: 8:00 AM PT **End:** 9:00 AM PT
Inspection Level: V - Terminal
HM Inspection Type: None

Carrier: FIRST TRANSIT INC
DBA:
600 VINE STREET
CINCINNATI, OH, 45202-2400
USDOT: 1002211 **Phone#:** (513)241-2200
MC/MX#: 576222 **Fax#:** (513)419-8619
State#: 100967
Location: CRESCENT CITY
Highway:
County: DEL NORTE

Driver:
License#: **State:**
Date of Birth:
CoDriver:
License#: **State:**
Date of Birth:
Milepost: **Shipper:** N/A
Origin:
Destination:
Bill of Lading: N/A
Cargo:

VEHICLE IDENTIFICATION

Unit	Type	Make	Year	State	Plate	Equipment ID	VIN	GVWR	CVSA Existing	CVSA #
1	BU	CHAM	2019	CA	1578603	230	1FDFE4FS0KDC36537	14500		

BRAKE ADJUSTMENTS

Axle #	1	2
Right	N/A	N/A
Left	N/A	N/A
Chamber	DISC	DISC

VIOLATIONS

Section	Type	Unit	OOS	CP	Citation #	Verify	Crash	Violations Discovered
26701(a) CVC		1	N	N		N	N	Windshield, windows or doors in vehicle are not safety glazing material--392.2--Specify: Plexiglass installed between passenger and driver compartments does not meet the requirements of VC 26704 and CCR 13 984. Must have an AS-4 rating or better.

HazMat: No HM transported **Placard:** **Cargo Tank:**

Special Checks: No data for special checks

State Information:
Odometer: 42788; File Code Number: 352297; PUC: 24770; Fuel Type: G; Passenger Capacity: 19; WC Passenger Capacity: 2; Bus Type: 1; Beat/Sub Area: N89; Regulated Vehicle: Y; Pre-Cleared Vehicle: N ; Veh #1 Type: 20

Pursuant to Section 24004 CVC, violations recorded on this SafetyNet Inspection Report must be corrected prior to redispatch. Violations marked out of service must be corrected before the vehicle is operated on the highway. For your convenience, KEEP THIS REPORT OR A COPY IN THE VEHICLE UNTIL ALL VIOLATIONS ARE CLEARED. This document should NOT be forwarded to the court for clearance procedures. DO NOT RETURN THIS FORM TO THE CALIFORNIA HIGHWAY PATROL.

Report Prepared By: R. L. STEELE
ID/Badge #: A12843

Copy Received By:

X _____

X _____

01002211 CA CAN9WR000698

California Highway Patrol
2485 Sonoma Street
Redding, CA 96001
Phone: (530) 242-4300
Internationally Accredited Agency CHP407F/343A

Report Number: CAN9WR000699
Inspection Date: 04/13/2022
Start: 9:00 AM PT **End:** 11:00 AM PT
Inspection Level: V - Terminal
HM Inspection Type: None

Carrier: FIRST TRANSIT INC
DBA:
600 VINE STREET
CINCINNATI, OH, 45202-2400
USDOT: 1002211 **Phone#:** (513)241-2200
MC/MX#: 576222 **Fax#:** (513)419-8619
State#: 100967
Location: CRESCENT CITY
Highway:
County: DEL NORTE

Driver:
License#: **State:**
Date of Birth:
CoDriver:
License#: **State:**
Date of Birth:
Milepost: **Shipper:** N/A
Origin: N/A **Bill of Lading:** N/A
Destination: N/A **Cargo:** N/A

VEHICLE IDENTIFICATION

Unit	Type	Make	Year	State	Plate	Equipment ID	VIN	GVWR	CVSA Existing	CVSA #
1	BU	FORD	2011	CA	1406812	288	1FDFE4FS7BDA43107	14500		

BRAKE ADJUSTMENTS

Axle #	1	2
Right	N/A	N/A
Left	N/A	N/A
Chamber	DISC	DISC

VIOLATIONS

Section	Type	Unit	OOS	CP	Citation #	Verify	Crash	Violations Discovered
26701(a) CVC	S	1	N	N		N	N	Windshield, windows or doors in vehicle are not safety glazing material--392.2--Specify: Plexiglass installed between passenger and driver compartments does not meet the requirements of VC 26704 and CCR 13 984. Must have an AS-4 rating or better.

HazMat: No HM transported **Placard:** **Cargo Tank:**

Special Checks: No data for special checks

State Information:
Odometer: 299782; File Code Number: 352297; PUC: 24770; Fuel Type: G; Passenger Capacity: 16; WC Passenger Capacity: 2; Bus Type: 1; Beat/Sub Area: N89; Regulated Vehicle: Y; Pre-Cleared Vehicle: N ; Veh #1 Type: 20

Pursuant to Section 24004 CVC, violations recorded on this SafetyNet Inspection Report must be corrected prior to redispatch. Violations marked out of service must be corrected before the vehicle is operated on the highway. For your convenience, KEEP THIS REPORT OR A COPY IN THE VEHICLE UNTIL ALL VIOLATIONS ARE CLEARED. This document should NOT be forwarded to the court for clearance procedures. DO NOT RETURN THIS FORM TO THE CALIFORNIA HIGHWAY PATROL.

Report Prepared By: R. L. STEELE
ID/Badge #: A12843

Copy Received By:

X _____

X _____

01002211 CA CAN9WR000699

California Highway Patrol
2485 Sonoma Street
Redding, CA 96001
Phone: (530) 242-4300
Internationally Accredited Agency CHP407F/343A

Report Number: CAN9WR000700
Inspection Date: 04/13/2022
Start: 10:00 AM PT **End:** 11:00 AM PT
Inspection Level: V - Terminal
HM Inspection Type: None

Carrier: FIRST TRANSIT INC
DBA:
600 VINE STREET
CINCINNATI, OH, 45202-2400
USDOT: 1002211 **Phone#:** (513)241-2200
MC/MX#: 576222 **Fax#:** (513)419-8619
State#:
Location: CRESCENT CITY
Highway:
County: DEL NORTE

Driver:
License#: **State:**
Date of Birth:
CoDriver:
License#: **State:**
Date of Birth:
Milepost: **Shipper:** N/A
Origin: N/A **Bill of Lading:** N/A
Destination: N/A **Cargo:** N/A

VEHICLE IDENTIFICATION

Unit	Type	Make	Year	State	Plate	Equipment ID	VIN	GVWR	CVSA Existing	CVSA #
1	BU	ELDO	2015	CA	1527232	295	1FDGF5GT0FED59186	19500		

BRAKE ADJUSTMENTS

Axle #	1	2
Right	N/A	N/A
Left	N/A	N/A
Chamber	DISC	DISC

VIOLATIONS

Section	Type	Unit	OOS	CP	Citation #	Verify	Crash	Violations Discovered
26701(a) CVC	S	1	N	N		N	N	Windshield, windows or doors in vehicle are not safety glazing material--392.2--Specify: Plexiglass installed between passenger and driver compartments does not meet the requirements of VC 26704 and CCR 13 984. Must have an AS-4 rating or better.
1261(e) T-13 CCR	S	1	N	N		N	N	Bus (Type 1) non-schoolbus, non-gasoline engine, exhaust discharge not within 15 of the rear of the bus or rear of doors/windows designed to be opened--393.83D: Exhaust pipe rusted through rear of axle 2 (hole) in pipe.

HazMat: No HM transported **Placard:** **Cargo Tank:**

Special Checks: No data for special checks

State Information:
Odometer: 158295; File Code Number: 352297; PUC: 24770; Fuel Type: D; Passenger Capacity: 26; WC Passenger Capacity: 1; Bus Type: 1; Beat/Sub Area: N89; Regulated Vehicle: Y; Pre-Cleared Vehicle: N ; Veh #1 Type: 20

Pursuant to Section 24004 CVC, violations recorded on this SafetyNet Inspection Report must be corrected prior to redispatch. Violations marked out of service must be corrected before the vehicle is operated on the highway. For your convenience, KEEP THIS REPORT OR A COPY IN THE VEHICLE UNTIL ALL VIOLATIONS ARE CLEARED. This document should NOT be forwarded to the court for clearance procedures. DO NOT RETURN THIS FORM TO THE CALIFORNIA HIGHWAY PATROL.

Report Prepared By: R. L. STEELE
ID/Badge #: A12843

Copy Received By:

X _____

X _____

01002211 CA CAN9WR000700

California Highway Patrol
2485 Sonoma Street
Redding, CA 96001
Phone: (530) 242-4300
Internationally Accredited Agency CHP407F/343A

Report Number: CAN9WR000701
Inspection Date: 04/13/2022
Start: 11:00 AM PT **End:** 12:05 PM PT
Inspection Level: V - Terminal
HM Inspection Type: None

Carrier: FIRST TRANSIT INC
DBA:
600 VINE STREET
CINCINNATI, OH, 45202-2400
USDOT: 1002211 **Phone#:** (513)241-2200
MC/MX#: 576222 **Fax#:** (513)419-8619
State#: 100967
Location: CRESCENT CITY
Highway:
County: DEL NORTE

Driver:
License#: **State:**
Date of Birth:
CoDriver:
License#: **State:**
Date of Birth:

Milepost: **Shipper:** N/A
Origin: N/A **Bill of Lading:** N/A
Destination: N/A **Cargo:** N/A

VEHICLE IDENTIFICATION

Unit	Type	Make	Year	State	Plate	Equipment ID	VIN	GVWR	CVSA Existing	CVSA #
1	BU	GLAV	2014	CA	1418665	292	4UZADRDU4ECFM6718	26000		

BRAKE ADJUSTMENTS

Axle #	1	2
Right	N/A	N/A
Left	N/A	N/A
Chamber	DISC	DISC

VIOLATIONS

Section	Type	Unit	OOS	CP	Citation #	Verify	Crash	Violations Discovered
26701(a) CVC	S	1	N	N		N	N	Windshield, windows or doors in vehicle are not safety glazing material--392.2--Specify: Plexiglass installed between passenger and driver compartments does not meet the requirements of VC 26704 and CCR 13 984. Must have an AS-4 rating or better.

HazMat: No HM transported **Placard:** **Cargo Tank:**

Special Checks: No data for special checks

State Information:
Odometer: 376623; File Code Number: 352297; PUC: 24770; Fuel Type: D; Passenger Capacity: 31; WC Passenger Capacity: 2; Bus Type: 1; Beat/Sub Area: N89; Regulated Vehicle: Y; Pre-Cleared Vehicle: N ; Veh #1 Type: 20

Pursuant to Section 24004 CVC, violations recorded on this SafetyNet Inspection Report must be corrected prior to redispatch. Violations marked out of service must be corrected before the vehicle is operated on the highway. For your convenience, KEEP THIS REPORT OR A COPY IN THE VEHICLE UNTIL ALL VIOLATIONS ARE CLEARED. This document should NOT be forwarded to the court for clearance procedures. DO NOT RETURN THIS FORM TO THE CALIFORNIA HIGHWAY PATROL.

Report Prepared By: R. L. STEELE ID/Badge #: A12843

Copy Received By:

X _____ X _____

01002211 CA CAN9WR000701

Amendment #1 FY 2021-22 RCTA Budget - May 23, 2022 (9 months of		FY 21-22 Adopted Budget	FY 21-22 Actuals thru 22-Mar	FY 21-22 Amendment #1 5/23/22	Notes
REVENUE					
	Local Transportation Revenues				
	Passenger Fares	$90,000	$40,000	$90,000	1
	5311(f) Route 20 Passenger Fares	$60,250	$13,233	$60,250	1
	Auxilliary Transportation (Advertising) Revenue	$15,000	$ 7,500	$15,000	2
	Local Cash Grants & Reimbursements				
	TDA Article 4 Local Transportation Fund	$860,722	$645,542	$860,722	3
	TDA Article 4.5 Local Transportation Fund CTSA	$45,301	$33,976	$45,301	4
	State Cash Grants & Reimbursements				
	State Transit Assistance	$198,330	$165,500	$198,330	5
	Proposition 1B PTMISEA (carryover balance)	$553,942	$ -	$553,942	6
	SB-1 State of Good Repair (carryover balance)	$114,506	$ 114,506	$114,506	7
	Low Carbon Transit Operations Program (LCTOP)	$29,552	$29,552	$29,552	8
	Federal Cash Grants and Reimbursements				
	Section 5311 -Operating	$179,831	$173,199	$179,831	
	Section 5311 - CARES Act/CRRSSA Operating	$251,300	$0	$251,300	9
	Section 5311-F Operating	$160,000	$173,199	$160,000	
	Section 5311 - CARES Act/CRRSSA Capital	$0	$0	$0	9
	Section 5339 Capital (formula + discretionary)	$260,000	$0	$260,000	10
	Section 5310 Capital (discretionary)	$158,000	$0	$158,000	10
	TDA Reserves Allocation (RCTA Reserves)	$ -		$0	16
	TOTAL REVENUE	$2,976,734	$1,396,207	$2,976,734	
	TOTAL OPERATIONS REVENUE	$1,860,734	$1,252,149	$1,860,734	
	TOTAL CAPITAL REVENUE	$1,116,000	$144,058	$1,116,000	
OPERATING EXPENSE				$0	
20200	Memberships & Dues	$ 1,000	$ 744	$992	
20280	Special Dept Expenses (CalACT Coop Purchase Fees)	$ 3,500	$ -	$1,000	
20221	Printing	$ 3,000	$ 37	$49	
20235	Accounting Services and Audits	$ 9,000	$8,900	$8,900	
20239	CTSA Program Expenses	$ 35,000	$23,802	$0	
20237	Marketing & Planning Expenses	$ 20,000	$6,728	$38,500	
20236	Legal Services	$ 5,000	$0	$2,500	
20170	Bus Stop Maintenance and Repair	$ -	$0	$0	
20233	Management Contract	$ 99,000	$58,215	$77,620	
20242	Operations and Maintenance Contract	$ 725,272	$352,175	$603,763	
20243	O& M Contract - Smith River/ Arcata Intercity Route	$ 529,248	$327,465	$561,401	
20230	Misc/Other Services Expenses	$ 6,000	$0	$2,000	
20244	Advertising, Brochures, Printing	$ 15,000	$5,916	$7,888	
20231	Misc Dept Services (website, GTFS, Alarm Svcs)	$ 5,000	$7,003	$22,500	
20297	Fuel	$ 90,000	$51,276	$68,368	
20297	Fuel - Smith River/Arcata Intercity Route	$ 70,000	$30,625	$40,833	
30410	Lease Expense	$ 36,000	$22,289	$29,719	
	TOTAL OPERATING EXPENSE	$ 1,652,020	$ 895,175	$1,193,567	
CAPITAL EXPENSE					
40620-001	Electric Bus Project (engineering, pilot bus charger)	$40,000	$0	$0	11
40620-001	Replace 2 Buses - Rehab 2 buses (5339+ PTMISEA)	$520,000	$ -	$0	
40620-001	Replace Buses - (5310+ PTMISEA)	$257,000	$ -	$0	
40621	Security Improvements	$ -	$0	$ 219	
40610-500	Bus Stop Shelters and Signage (SB-1 SGR)	$ 38,115		$ 60,115	12
40620-418	Radio System Improvements	$ 1,800	$0	$ -	
40610-200	Facility Improvements (TBD)	$ 20,000	$23,220	$ 48,215	
40610-200	Mobile Transit Center Kiosk (eng and purchase)	$ 66,000	$0	$ 44,000	13
30411	PTMISEA Capital Balance after FY (balance - expends)	$ 97,493	$243,000	$ 243,000	14
	TOTAL CAPITAL EXPENSE	$ 1,040,408	$266,220	$ 395,549	
	TOTAL EXPENDITURES	$ 2,692,428	$1,161,395	$ 1,589,116	
	Increase for TDA Reserves	$ 284,306	$ 234,812	$ 1,387,618	15

FY 2022-23 RCTA Budget - May 23, 2022		FY 21-22 Adopted Budget	FY 21-22 year-end Projected	FY 22-23 Draft Budget	Notes
REVENUE					
	Local Transportation Revenues				
	Passenger Fares	$90,000	$53,333	$55,000	1
	5311(f) Route 20 Passenger Fares	$60,250	$17,644	$25,000	1
	Auxilliary Transportation (Advertising) Revenue	$15,000	$ 2,000	$10,000	2
	Local Cash Grants & Reimbursements				
	TDA Article 4 Local Transportation Fund	$860,722	$860,723	$955,212	3
	TDA Article 4.5 Local Transportation Fund CTSA	$0	$0	$0	4
	State Cash Grants & Reimbursements				
	State Transit Assistance	$198,330	$220,667	$265,609	5
	Proposition 1B PTMISEA (carryover balance)	$553,942	$ 243,000	$243,000	6
	SB-1 State of Good Repair (bus stops fund balance)	$114,506	$ 114,506	$64,506	7
	SB-1 State of Good Repair (bus replace fund balance)	$0	$ -	$43,487	8
	Low Carbon Transit Operations Program (LCTOP)	$29,552	$15,000	$15,000	9
	LCTOP (Capital - Electric Bus)	$97,262	$0	$166,346	10
	Federal Cash Grants and Reimbursements				
	Section 5311 -Operating	$179,831	$173,199	$233,780	
	Section 5311 - CARES Act/CRRSSA Operating	$251,300	$231,000	$374,264	11
	Section 5311-F Operating	$160,000	$173,199	$279,970	
	Federal FTA Capital Funds				
	Section 5339 Capital (formula + discretionary)	$260,000	$0	$260,000	
	Section 5310 Capital (discretionary)	$158,000	$0	$186,116	
	TDA Reserves Allocation to Operating	$ -	0	$0	
	TOTAL REVENUE	$3,028,695	$2,157,572	$3,177,290	
	TOTAL OPERATIONS REVENUE	$1,815,433	$1,785,066	$2,213,835	
	TOTAL CAPITAL REVENUE	$1,116,000	$372,506	$963,455	
OPERATING EXPENSE					
20200	Memberships & Dues	$ 1,000	$ 992	$1,030	
20280	Special Dept Expenses (CalACT Coop Purchase Fees)	$ 3,500	$ 1,000	$3,605	
20221	Printing	$ 3,000	$ 49	$3,090	
20235	Accounting Services and Audits	$ 9,000	$8,900	$9,270	
20239	CTSA Program Expenses	$ -	$0	$0	
20237	Marketing & Planning Expenses	$ 20,000	$40,000	$20,600	12
20236	Legal Services	$ 5,000	$2,500	$5,150	
20170	Transit Technology Systems & Software (AVL,Wifi)	$ -	$0	$40,000	13
20233	Management Contract	$ 99,000	$77,620	$78,034	
20242	Operations and Maintenance Contract	$ 725,272	$603,763	$968,034	
20243	O& M Contract - Smith River/ Arcata Intercity Route	$ 529,248	$561,401	$446,489	
20230	Misc/Other Services Expenses	$ 6,000	$0	$1,030	
20244	Advertising, Brochures, Printing	$ 15,000	$7,888	$15,450	
20231	Misc Dept Services (website, GTFS, Alarm Svcs)	$ 5,000	$30,000	$5,150	
20297	Fuel	$ 90,000	$68,368	$80,000	
20297	Fuel - Smith River/Arcata Intercity Route	$ 70,000	$40,833	$90,000	
30410	Lease Expense	$ 36,000	$29,719	$37,080	
	TOTAL OPERATING EXPENSE	$ 1,617,020	$ 1,473,033	$ 1,804,012	
CAPITAL EXPENSE					
40620-001	Electric Bus Project (engineering, partial construction)	$40,000	$0	$166,346	14
40620-001	Replace 2 Buses - Rehab/Replace 2 buses (5339)	$520,000	0	$520,000	
40620-001	Replace Buses - (5310 Electric Bus)	$257,000	0	$292,145	
40621	Security Improvements	$ -	$0	$ -	
40610-500	Bus Stop Shelters and Signage (SB-1 SGR)	$ 38,115	$38,115	$ 32,000	
40620-418	Radio System Improvements	$ 1,800	$0	$ 2,400	
40610-200	Facility Improvements (TBD)	$ 20,000	$48,215	$ 20,000	
40610-200	Transit Hub (eng, lot prep, kiosk purchase)	$ 66,000	$0	$ 175,000	15
	TOTAL CAPITAL EXPENSE	$ 942,915	$329,549	$ 1,207,891	
	TOTAL EXPENDITURES	$ 2,559,935	$1,523,116	$ 3,011,903	
	Increase for TDA Reserves	$ 468,760	$ 634,456	$ 165,387	16

Budget Notes

1	modified fare projections based on very low FY 20-21 and 21-22 actuals
2	Ad Revenue Program was generating steady $17-18K/year since inception, lost main advertiser in FY 21-22, need to push sales
3	Highlight of this budget. TDA LTF continues to grow, research indicates increased capture of e-commerce sales taxes is the main driver.
4	CTSA now has its own annual budget, see Fund 691
5	STA fund dropped ~20% during pandemic, but has rebounded very well
6	The PTMISEA fund was accrued to RCTA and built a balance of over $1M dollars a few years ago. PTMISEA has been used to buy replacement buses and power Williams Drive facility projects since 2016. This is unencumbered balance entering FY 22-23. Caltrans is ending program 6/30/23, so RCTA must encumber or expend remaining funds by end of FY 22-23. Likely bus replacements or Cultural Hub/Kiosk projects?
7	State of Good Repair (SGR) has been dedicated to bus stop projects since inception, this is rollover balance entering FY 22-23 programmed to bus stops. Future SGR will be programmed to bus replacements, to partially offset lost PTMISEA funding.
8	State of Good Repair (SGR) will be dedicated to bus replacements starting in FY 22-23. Balances can rollover year to year. Will not be enough to fully offset lost PTMISEA, will need TDA LTF or other funding.
9	LCTOP funds were used to power Free Rides Program for several years, rolling over 3 years allocations. This is remaining balance for Free Rides Program, likely enough for FY 22-23. It is possible that in future years Caltrans will allow RCTA to program more LCTOP to Free Ride Program.
10	LCTOP funds were switched from Free Ride Program to Electric Bus Project by Caltrans in 2019. This is 3 year's rollover accumulation of funds. Cannot be used for soft costs, construction or purchase of equipment only. Electric Bus Project will likely consume all this balance, plus perhaps FY 23-24 allocation if Caltrans approves.
11	One-time Federal FTA COVID-19 Pandemic Assistance to RCTA totals $1.7M. Limited to operations in general, and initially further limited to COVID expenses by Caltrans. RCTA working with Caltrans to seek maximum annual drawdown without impacting its other FTA funding. Target amount only, actual amount TBD. Staff hopes for ~$300k/year.
12	RCTA contract administration team isolates marketing hours, hours managing the ad revenue sales program, and charges those to this line item.
13	Proposed new line item for Transit Technology Operating Expenditures. RCTA has added an array of techonogies to its operations in recent years, including AVL/CAD, DAR scheduling software, GTFS and GTFS-Real-Time, Interactive Webpage Maps with bus arrivals, and is adding on-board wifi and credit card validator. These are ongoing annual fees & one-time charges.
14	Line contains capital funds for engineering and construction of Williams Drive EV Charging/yard improvements, including upgraded electrical infrastructure for EV bus charging. Includes $40k in TDA LTF for engineering (not LCTOP eligible expenses). Engineering in FY 22-23, start construction in late FY 22-23, rolling into FY 23-24 for completion.
15	Builds on Hub Project planning work done in FY 21-22. Includes $25k for Engineering of Parking Lot Improvements, $100k for rehab/construction of parking lot, and $50k for a mobile kiosk to staff the facility, at least initially. Board selected preferred location in late FY 21-22. The hub could host either a mobile kiosk or eventually a permanent kiosk structure, both of which would house RCTA staff during working hours, providing information, ticket sales, security, supervision, etc.
16	Projected amount that RCTA's reserve fund will grow, if all other assumptions in this budget prove accurate. Caution advised with the high number of capital projects contained in this budget, many of which are relying on planning level cost estimates. Monitor closely.

FY 2022-23 Draft RCTA CTSA Budget - May 23, 2022	FY 21-22	FY 21-22	FY 22-23		
	Adopted	Projected	FINAL		
CTSA REVENUE (691-018-9xxxx)	Budget	Rev/Exp	Budget	Notes	draft comments
Local Transportation Revenues					
91060 Passenger Fares		$0	$0	1	not assuming any fare-generating projects will launch in FY 22-23
Local Cash Grants & Reimbursements					
90621 TDA Article 4.5 Local Transportation Fund CTSA	$45,301	$45,301	$50,274	2	TDA LTF is source of CTSA funds (up to 5% of County totals), and its growing due to e-commerce
Totals	$45,301	$45,301	$50,274		
CTSA OPERATING EXPENSE (691-018-xxxxx)					
20233 Management Contract Labor Hours	$5,000	$ 1,043	$ 5,000		ADA Eligibility Determination far under projections due to pandemic
20235 Accounting Services and Audits	$ 1,000	$1,000	$ 1,000		need to move a share of RCTA auditing costs here from 645
20236 Legal Services	$ 500	$500	$ 500		need to move a share of RCTA legal fees here from 645
20237 Planning & Marketing Expenses	$ -	$0	$ 20,000		co-funding study to explore medical/shopping shuttle to Southern Oregon
20242 Operations & Maintenance Contract	$ 15,620	$26,777	$ 15,000		FT- Travel Training & Eligibility Support lower in new 2022 contract ($6000), plus variable hours
20221 Advertising & Printing	$0	$ -	$ 1,000		did not do a new Travel Training brochure in FY 21-22
20280 Special Dept Expenses (CTSA)	$5,000	$ 4,800	$ 5,274		GetGoing Software License increased annually, ID card maker supplies, digital cam
20239 CTSA Fuel	$ -	$0	$ 2,500		fuel for TBD new CTSA projects - unreimbursed fuel
Totals	$27,120	$34,120	$50,274		
Balance Returned to DNLTC for reprogramming - no CTSA reserve account	$18,181	$11,181	$0		assumes no CTSA funding returned to DNLTC this year

RESOLUTION NO. 2021-22-10

REDWOOD COAST TRANSIT AUTHORITY RESOLUTION APPROVING SUBMITTAL OF FISCAL YEAR 2022-23 TRANSPORTATION DEVELOPMENT ACT CLAIM TO DEL NORTE LOCAL TRANSPORTATION COMMISSION FOR OPERATING AND CAPITAL EXPENSES

WHEREAS, RCTA submits its annual Transportation Development Act Claim Packet to the Del Norte Local Transportation Commission, which, in its official capacity as the designated Regional Transportation Planning Agency, hereafter referred to as the RTPA, is allocating funds for transportation purposes; and

WHEREAS, there is need for low or low-priced transportation in Del Norte County; and

WHEREAS, the transit services in Del Norte County are successful programs; and

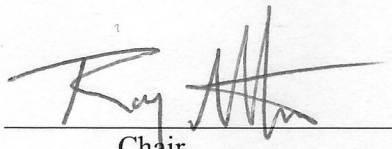
WHEREAS, Redwood Coast Transit Authority provides public transportation services on a dial-a-ride and on a fixed-route basis to the citizens of Del Norte County; and

WHEREAS, the proposed expenditure of funds by the Redwood Coast Transit Authority is in accordance with the approved 2020 Del Norte Regional Transportation Plan;

WHEREAS, the available funds include Local Transportation Fund estimate of $955,212 plus $50,274 in Local Transportation Funds for RCTA's CTSA program, and State Transit Assistance Fund estimate of $265,609;

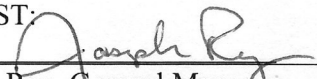
NOW, THEREFORE, BE IT RESOLVED THAT the RCTA hereby claims the following TDA funding through the RTPA for Fiscal Year 2022-23, an allocation from the Local Transportation Fund a sum not to exceed $1,005,486 and State Transit Assistance Fund a sum not to exceed $265,609, and adjusted quarterly to actual income, to Redwood Coast Transit Authority for transportation purposes pursuant to Public Utilities Code Section 99262 and Transportation Development Act Articles 4 & 4.5 for use by the Redwood Coast Transit Authority for the purpose of funding the operation and capital needs of dial-a-ride and fixed-route transit services during fiscal year 2022-23.

PASSED AND ADOPTED by the Redwood Coast Transit Authority on the 23rd day of May 2022 by the following polled vote:
AYES:
NOES:
ABSTAIN:



, Chair
Redwood Coast Transit Authority

ATTEST:



Joseph Rye, General Manager
Redwood Coast Transit Authority

AGREEMENT FOR TRANSIT OPERATIONS AND MAINTENANCE SERVICES
REDWOOD COAST TRANSIT AUTHORITY

THIS AGREEMENT ("Agreement") is made and entered into this 1st day of January 2022, by and between the Redwood Coast Transit Authority ("RCTA"), and First Transit, an independent Contractor ("CONTRACTOR").

RECITALS

WHEREAS, RCTA has an ongoing need to contract with an established operations and maintenance contracting entity/company to furnish services as an Operations and Maintenance CONTRACTOR to deliver daily public transportation services in Del Norte County, under the moniker of Redwood Coast Transit, services that CONTRACTOR is specially trained and experienced and competent to perform; and

WHEREAS, RCTA issued a Request for Proposals (RFP) on September 27, 2021, CONTRACTOR submitted a timely and complete proposal in response, and RCTA deemed CONTRACTOR the most qualified to perform the services of Operations and Maintenance CONTRACTOR; and

WHEREAS, RCTA has selected CONTRACTOR for the Operations and Maintenance CONTRACTOR to deliver daily public transportation services in Del Norte County, under the moniker of Redwood Coast Transit.

NOW THEREFORE, in consideration of the work to be rendered and the sums to be paid for that work, and each and every covenant and condition contained in this Agreement, the parties agree as follows:

1. SERVICES

CONTRACTOR is engaged by this Agreement as the duly authorized Operations and Maintenance CONTRACTOR of RCTA and must provide operations, operations management, maintenance of vehicles, radios, and other equipment, including the 140 Williams Drive Operations & Maintenance facility, data collection and reporting, and a variety of other generally accepted transit operations tasks in connection with its functions. A detailed Scope of Services will be amended to this contract after agreement by RCTA and attached as Exhibit A. The Scope of Services may be revised or updated from time to time by mutual written agreement of the parties.

2. TERM AND TERMINATION

This Agreement begins on January 1, 2022 and ends on December 31, 2026. With approval of the RCTA Board of Directors, the contract may be extended unilaterally for up to two additional years, in one-year increments, at option year prices priced submitted as part of the Proposal response to this RFP, not negotiated in the future. This Agreement may be terminated only in accordance with processes detailed in "Termination of Contract", on page 16 of the RCTA Operations and Maintenance Services Request for Proposal.

3. INDEPENDENT CONTRACTOR

CONTRACTOR is an independent CONTRACTOR and not an employee of RCTA. At all times during the term of this Agreement, CONTRACTOR will be responsible for his/her own property and income taxes, worker's compensation insurance, and any other costs and expenses in connection with the performance of services under this Agreement. RCTA does not have the right to control the means by which CONTRACTOR accomplishes services rendered pursuant to this Agreement.

CONTRACTOR must provide all his/her own general overhead necessary to perform the required services, including but not limited to office equipment, clerical assistance, utilities, telephone charges, local travel, insurance, and office supplies, and is not entitled to reimbursement for these. Details at this level are contained in the RFP, and the CONTRACTOR Proposal and are enforceable herein.

4. COMPENSATION

As compensation for the services provided hereunder, RCTA will pay CONTRACTOR in accordance with CONTRACTOR's Cost Proposal, which is incorporated herein by this reference and attached hereto as Exhibit B. CONTRACTOR will submit invoices reflecting work performed prior to payment for services. Invoices will be submitted to RCTA once per month. CONTRACTORs invoicing procedure must comply with all federal, state, and local laws, policies, and guidelines.

5. RECORDS

CONTRACTOR must file and keep all records pertinent to RCTA activities. These are the property of RCTA and CONTRACTOR must transfer all records to RCTA upon termination of the contract. CONTRACTOR will develop and follow a records retention policy that complies with applicable State of California, Caltrans, and Federal Transit Administration laws and policies. CONTRACTOR will make all records available to state and local agencies and the public as appropriate and in compliance with California law.

6. INSURANCE

During the term of this Agreement, CONTRACTOR must maintain insurance of the types and amounts designated below. Certificates of insurance in the form approved by the Risk Manager of Del Norte County must be filed with the County Risk Manager concurrent with the execution of this Agreement. The insurance must name RCTA as an additional insured on a primary basis for General Liability Insurance and must state that the policy will not be canceled nor the scope of coverage reduced by the insurer except after filing written notice thereof with RCTA 30 days in advance. No work is authorized until the insurance certificates are filed.

a. Commercial General Liability (CGL): Insurance Services Office (ISO) Form CG 00 01 covering CGL on an "occurrence" basis, including products-completed operations, personal & advertising injury, with limits no less than Ten Million Dollars ($10,000,000.00) per occurrence. If general aggregate limit applies, either the general

aggregate limit will apply separately to this Agreement or the general aggregate limit will be twice the required occurrence limit.

b. Worker's Compensation. As required by the State of California, within Statutory Limits, and Employer's Liability Insurance with limits of no less than One Million Dollars ($1,000,000.00) per accident for bodily injury or disease.
c. Automobile Liability Insurance. ISO Form Number CA 00 01 covering any auto (Code 1), or if CONTRACTOR has no owned autos, hired, (Code 8) and non-owned autos (Code 9), with limits no less than Ten Million Dollars ($10,000,000.00) per accident for bodily injury and property damage.

7. LICENSES, PERMITS, ETC.

CONTRACTOR represents and warrants to RCTA that he/she/it has all licenses, permits, qualifications, and approvals legally required for CONTRACTOR perform the services required by this Agreement. If at any time CONTRACTOR ceases to have the licenses, permits, qualifications, or approvals required for CONTRACTOR to perform the services, CONTRACTOR will immediately notify RCTA and this Agreement may be terminated at RCTA's discretion.

8. STANDARD OF PERFORMANCE

CONTRACTOR must perform all services required by this Agreement in a manner and according to the standards observed by competent practitioners of the profession in which CONTRACTOR is engaged. Failure to perform services in such a manner is grounds for termination of this Agreement.

9. INDEMNITY

CONTRACTOR must defend, indemnify, and hold harmless RCTA and its elected and appointed officers, agents, and employees from any liability for damage or claims for damage for personal injury, including death, as well as for property damage, which may arise from the intentional or negligent acts or omissions of CONTRACTOR in the performance of services rendered under this Agreement.

10. THE CIVIL RIGHTS, HCD, AND AGE DISCRIMINATION ACTS

During the performance of this Agreement, CONTRACTOR ensures that no otherwise qualified person will be excluded from participation or employment, denied program benefits, or be subjected to discrimination on the basis of race, color, national origin, sex, age, or handicap, under any program or activity funded by this contract, as required by Title VI of the Civil Rights Act of 1964, Title I of the Housing and Community Development Act of 1974, as amended, and the Age Discrimination Act of 1975, and all implementing regulations.

11. STATE NONDISCRIMINATION CLAUSE

During the performance of the services required by this Agreement CONTRACTOR and any subCONTRACTORs must not discriminate against any employee or applicant for employment on the basis of race, religion, color, national origin, ancestry, physical handicap, medical condition, marital status, age (over 40), or sex. CONTRACTOR and any subCONTRACTORs will ensure that the evaluation and treatment of any employees and applicants for employment are free of such discrimination. CONTRACTOR and any subCONTRACTORs will comply with the provisions of the Fair Employment and Housing Act and the applicable regulations, which are incorporated by this reference. CONTRACTOR and any subCONTRACTORs will give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining agreement.

12. CONFLICT OF INTEREST

No Congressional representative and no resident commissioner may receive any benefit from this grant agreement or activity. None of the CONTRACTOR's officers, members or employees, designees or agents, governing board members, or other officials of CONTRACTOR have any interest in any contracts or proceeds for the work done in conjunction with this Agreement other than payment for services provided under this Agreement.

13. DRUG-FREE WORKPLACE CERTIFICATION

The CONTRACTOR certifies, when signing the contract, that it complies with the Drug-Free Workplace Act of 1990 and will take the following actions, if necessary:

a. Publish a statement to notify the CONTRACTOR's employees, if any, of prohibition of the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance and tell them what actions may be taken against them for violations;
b. Establish a Drug-Free Awareness Program to inform employees, if any, of the danger of drug abuse at work, the CONTRACTOR's drug-free workplace policy, and available employee assistance programs, and the penalties for violation of the drug-abuse policies; and
c. Give every employee, if any, a copy of the drug-free policy statement and require they abide by its terms as a condition of employment.

14. AMERICANS WITH DISABILITIES ACT (ADA) OF 1990

CONTRACTOR must comply with the ADA and applicable regulations and guidelines thereof, which prohibit discrimination on the basis of disability in employment, state and local government service, and in public accommodations and commercial facilities.

15. COMPLIANCE WITH LAWS.

CONTRACTOR will comply with all federal, state, and local laws and ordinances applicable to the work performed under this Agreement. CONTRACTOR is responsible for understanding and

adhering to laws and policies specific to the work performed under this Agreement. The exclusion of an applicable law, policy, or guideline from this Agreement does not excuse CONTRACTOR from responsibility for knowing and following such law, policy, or guideline. CONTRACTOR's failure to comply with applicable law, policy, or guideline is grounds for early termination of this Agreement.

16. MONITORING AND AUDITING

CONTRACTOR agrees to be subject to monitoring and auditing by RCTA and any other entity legally entitled to account for funds expended for performance under the terms of this Agreement. Such monitoring may include, but not be limited to, monitoring for compliance with RCTA's state and federal contracts.

17. GOVERNING LAW AND CHOICE OF FORUM

This Agreement will be administered and interpreted under California law. Any litigation arising from this Agreement must be brought in Superior Court of Del Norte County.

18. COSTS AND ATTORNEYS FEES

If any party commences any legal action against the other party arising out of this Agreement of the performance thereof, the prevailing party in such action may recover its reasonable litigation expenses, including court costs, expert witness fees, discovery expenses, and attorneys' fees.

19. SEVERABILITY

If any court of competent jurisdiction or subsequent preemptive legislation holds or renders any of the provisions of this Agreement unenforceable or invalid, the validity and enforceability of the remaining provisions, or portions thereof, will not be affected.

20. ENTIRE AGREEMENT

This Agreement, along with the 2021 RCTA Operations and Maintenance Contract Request for Proposals, and the Proposal submitted by the selected CONTRACTOR, combine to form the entire agreement between the parties with respect to its subject matter. This Agreement may be amended from time to time by the written approval of both parties; however, neither party is required to approve any proposed amendment.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement to commence on January 1, 2022.

REDWOOD COAST TRANSIT AUTHORITY:

By: Darrin Short, RCTA Chair

Date: 1/31/22

APPROVED AS TO FORM:

Autumn E. Luna, Counsel
Redwood Coast Transit Authority

CONTRACTOR:

Brad Thomas, First Transit

Date: January 18, 2022

BUDGET PROPOSAL
OPERATIONS AND MAINTENANCE

Instructions to Proposers: This Form 1.1 is to be used to submit the budget proposed for all work described in this RFP. The proposed budget must consist of fixed hourly costs, by mode of service, and fixed monthly costs.

	Base Years					Option Years	
Contract Year (CY 22 means January thru December 2022	**CY22**	**CY23**	**CY24**	**CY25**	**CY26**	**CY27**	**CY28**
Fixed Route Service Hour Rate	$ 37.82	$ 39.00	$ 40.49	$ 42.73	$ 44.54	$ 45.73	$ 47.17
Dial A Ride Service Hour Rate	$ 37.82	$ 39.00	$ 40.49	$ 42.73	$ 44.54	$ 45.73	$ 47.17
Special Service Rate for CTSA Service Hours	$ 37.82	$ 39.00	$ 40.49	$ 42.73	$ 44.54	$ 45.73	$ 47.17
Monthly Fixed Fee	$ 62,613	$ 66,169	$ 68,169	$ 69,815	$ 72,479	$ 75,379	$ 77,320
Monthly Liability Insurance (General & Auto)	$ 7,845	$ 8,140	$ 8,452	$ 8,786	$ 9,136	$ 9,498	$ 9,874
Total Annual Price	$ 1,401,159	$ 1,464,727	$ 1,514,379	$ 1,570,981	$ 1,633,736	$ 1,690,469	$ 1,739,435
Elements of Price/Rev Hour							
Operator Wages	$ 399,792	$ 406,985	$ 422,365	$ 447,511	$ 466,647	$ 476,388	$ 490,148
Operator Benefits	$ 123,627	$ 128,852	$ 134,232	$ 140,635	$ 146,677	$ 153,208	$ 159,478
Other Operating Costs (specify):							
1. Bus Stop Janitorial Supplies	$ 7,725	$ 7,880	$ 8,037	$ 8,198	$ 8,362	$ 8,529	$ 8,700
2. Overhead (Variable)	$ 14,012	$ 14,647	$ 15,144	$ 15,710	$ 16,337	$ 16,905	$ 17,394
3. Profit (Variable)	$ 10,509	$ 14,647	$ 15,144	$ 15,710	$ 16,337	$ 16,905	$ 17,394
Subtotal	$ 555,664	$ 573,011	$ 594,921	$ 627,763	$ 654,360	$ 671,935	$ 693,114
Monthly Fixed Price Elements							
Project/General Manager Salary	$ 85,000	$ 86,700	$ 88,434	$ 90,203	$ 92,007	$ 93,847	$ 95,724
Project/General Manager Benefits	$ 20,212	$ 20,958	$ 21,690	$ 22,452	$ 23,246	$ 24,071	$ 24,931
Operation/Safety Mgr Salary	$ 65,000	$ 66,950	$ 68,959	$ 71,027	$ 73,158	$ 75,353	$ 77,613
Operations/Safety Mgr Benefits	$ 20,447	$ 21,353	$ 22,255	$ 23,197	$ 24,182	$ 25,210	$ 26,285
Dispatcher I/Dispatcher II Salary	$ 113,788	$ 117,152	$ 120,980	$ 126,105	$ 130,155	$ 134,905	$ 139,029
Dispatcher I/Dispatcher II Benefits	$ 34,663	$ 36,188	$ 37,718	$ 39,389	$ 41,053	$ 42,824	$ 44,621

	Base Years					Option Years	
Contract Year (CY 22 means January thru December 2022	**CY22**	**CY23**	**CY24**	**CY25**	**CY26**	**CY27**	**CY28**
Mechanic/Tech in Charge/Tech in Charge Salary	$ 84,966	$ 87,261	$ 89,617	$ 92,036	$ 94,521	$ 97,073	$ 99,694
Mechanic/Tech in Charge/Tech in Charge Benefits	$ 29,535	$ 30,857	$ 32,195	$ 33,595	$ 35,059	$ 36,590	$ 38,191
Service Assistant Salary	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Service Assistant Benefits	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bus Stop Janitorial Salary	$ 40,299	$ 42,472	$ 44,646	$ 46,819	$ 48,993	$ 51,167	$ 53,340
Bus Stop Janitorial Benefits	$ 6,729	$ 7,071	$ 7,375	$ 7,685	$ 8,000	$ 8,321	$ 8,648
CTSA Eligibility Support Costs	$ 500	$ 513	$ 525	$ 538	$ 552	$ 566	$ 580
CTSA Travel Training Support Cost	$ 2,700	$ 2,768	$ 2,837	$ 2,908	$ 2,980	$ 3,055	$ 3,131
Non-Vehicle Insurance	$ 4,955	$ 5,141	$ 5,338	$ 5,549	$ 5,770	$ 5,999	$ 6,236
Office Expenses	$ 39,084	$ 40,061	$ 41,062	$ 42,089	$ 43,141	$ 44,220	$ 45,325
Uniform Expenses	$ 4,050	$ 4,151	$ 4,255	$ 4,361	$ 4,470	$ 4,582	$ 4,697
Training Expenses	$ 4,773	$ 4,892	$ 4,817	$ 4,938	$ 5,061	$ 5,188	$ 5,317
Incentives/Liquidated Damages	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Expenses (specify):							
1. utilities	$ 26,468	$ 27,130	$ 27,808	$ 28,503	$ 29,216	$ 29,946	$ 30,695
2. IT Expenses/IT Equipment	$ 43,956	$ 54,797	$ 55,774	$ 56,775	$ 55,570	$ 53,025	$ 44,216
3. Maintenance Parts & Supplies	$ 50,673	$ 49,735	$ 50,885	$ 45,353	$ 54,588	$ 67,183	$ 75,194
Contract Overhead	$ 42,035	$ 43,942	$ 45,431	$ 47,129	$ 49,012	$ 50,714	$ 52,183
Profit	$ 31,526	$ 43,942	$ 45,431	$ 47,129	$ 49,012	$ 50,714	$ 52,183
Subtotal (Per Month)	$ 62,613	$ 66,169	$ 68,169	$ 69,815	$ 72,479	$ 75,379	$ 77,320

Note: 14,693 is new agreed upon Baseline Annual System Revenue Hours per BAFO Negotiations 11/21/21

June 30, 2022

MEMO TO: Tamera Leighton, DNLTC

FROM: Joseph Rye, General Manager

SUBJECT: Documentation of Eligibility Under TDA Efficiency Criteria

---

Article 99314.6 states that:

> *Except as provided in paragraph (2), funds shall not be allocated for operating purposes pursuant to Sections 99313 and 99314 to an operator unless the operator meets either of the following efficiency standards:*
>
> > *(A)The operator's total operating cost per revenue vehicle hour in the latest year for which audited data are available does not exceed the sum of the preceding year's total operating cost per revenue vehicle hour and an amount equal to the product of the percentage change in the Consumer Price Index for the same period multiplied by the preceding year's total operating cost per revenue vehicle hour.*

The Redwood Coast Transit Authority total operating cost per vehicle hour in the latest year for which audited data is available was $121.53 for FY 2020-21. The total operating cost per vehicle hour in the preceding FY 2019-20 was $78.80. These results are based on the June 30, 2021 fiscal audit as prepared by RJ Ricciardi, Inc. CPAs. The audit is on file at the DNLTC office.

According to data available on the California Department of Finance Statistical and Economic Data web page, the rate of increase in the California All Urban Consumers CPI from FY 2019-20 to FY 2020-21 was 5.0%.

The COVID-19 Pandemic hit RCTA, California, and the planet in March 2020, disrupting business as usual and leading to mandatory travel restrictions that lingered intermittently through FY 2021-22. RCTA reacted quickly and decisively by cutting service 30% in early April 2020. The reduced service hours to match dramatic drops in travel demand caused the overall cost per revenue hour to rise by 54.22% as “fixed costs” including management, leases, and other items beyond driver wage costs remained steady despite provision of fewer service hours. This increase is more than the increase in the California All Urban Consumers CPI, therefore, Redwood Coast Transit Authority seeks an exemption from the TDA Efficiency Criteria due to extenuating factors associated with ongoing COVID-19 pandemic impacts.

STANDARD ASSURANCES FOR APPLICANTS

CLAIMANT ASSURANCES: (initial sections which apply)

X A. Claimant certifies that it has submitted a satisfactory, independent fiscal audit, with required certification statement, to the RTPA and to the State Controller, pursuant to PUC 99245 and 21 Cal. Code of Regulations Section 6664 for the prior fiscal year (project year minus two). Claimant assures that this audit requirement will be completed for the current fiscal year (project year minus one).

X B. Claimant certifies that it has submitted a State Controller Report, in conformance with the uniform system of accounts and records, to the RTPA, and to the State Controller, pursuant to PUC 99243, for the prior year (project year minus two). Claimant assures that this report will be completed for the current fiscal year (project year minus one).

X C. Claimant filing a claim for LTF or STA funds certifies that it will maintain for the project that ratio of fare revenues and local funds to operating cost required under PUC Sections 99268.

X D. Claimant who receives an allocation of LTF funds for extension of service pursuant to PUC Section 99268.8 certifies that it will file a report of these services with the RTPA pursuant to CCR section 6633.8(b) within 90 days after close of the fiscal year in which the allocation was granted.

X E. The operator's operating budget has not increased by more than 15% over the preceding year, nor is there a substantial increase or decrease in the scope of operations or capital budget provisions for major new fixed facilities unless the operator has reasonably supported and substantiated the change(s).

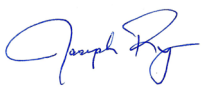
X F. Claimant certifies that it is in compliance with PUC Section 99264 that it does not routinely staff, with two or more persons, a vehicle for public transportation purposes designed to be operated by one person.

X G. Claimant certifies that it is making full use of federal funds available under the Urban Mass Transportation Act of 1964, as amended in accordance with Section 6754(a)(3).

X H. Claimant certifies that this is in compliance with PUC Section 99155 that if it offers reduced fares to seniors, the same reduced rate is offered to disabled persons, handicapped persons, and disabled veterans and it honors the federal Medicare card for identification to receive reduced fares.

X I. Claimant certifies that it is in compliance with PUC Section 99155.5 regarding dial-a-ride and paratransit services being accessible to handicapped persons and that the service is provided to persons without regard to vehicle ownership and place of residence.

The undersigned hereby certifies that the above statements are true and correct.

Signature: 

Name: Joseph Rye

Title: General Manager

RESOLUTION NO. 2022 9

DEL NORTE LOCAL TRANSPORTATION COMMISSION RESOLUTION ALLOCATING FUNDS TO REDWOOD COAST TRANSIT AUTHORITY FOR OPERATING EXPENSES

WHEREAS, the Del Norte Local Transportation Commission in its official capacity as the designated Regional Transportation Planning Agency, hereafter referred to as the RTPA, is allocating funds for transportation purposes; and

WHEREAS, there is need for moderately low or low priced transportation in Del Norte County; and

WHEREAS, the operation of dial-a-ride and fixed-route transit services in Del Norte County are successful transportation programs; and

WHEREAS, Redwood Coast Transit Authority provides public transportation services on a dial-a-ride and on a fixed-route basis to the citizens of Del Norte County; and

WHEREAS, the proposed expenditure of funds by the Redwood Coast Transit Authority is in accordance with the approved 2020 Del Norte Regional Transportation Plan;

WHEREAS, the available funds include Local Transportation Fund estimate of $955,212 plus $50,274 in Local Transportation Funds for RCTA's CTSA program, and State Transit Assistance Fund estimate of $265,609.

NOW, THEREFORE, BE IT RESOLVED THAT the RTPA hereby allocates the following TDA funding through the RTPA for Fiscal Year 2022-23, an allocation from the Local Transportation Fund a sum not to exceed $1,005,486 and State Transit Assistance Fund a sum not to exceed $265,609, and adjusted quarterly to actual income, to Redwood Coast Transit Authority for transportation purposes pursuant to Public Utilities Code Section 99262 and Transportation Development Act Articles 4 & 4.5 for use by the Redwood Coast Transit Authority for the purpose of funding the operation of dial-a-ride and fixed-route transit services during fiscal year 2022-23.

PASSED AND ADOPTED by the Del Norte Local Transportation Commission on the 7th day of June 2022 by the following polled vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____

Darrin Short, Chair
Del Norte Local Transportation Commission

ATTEST:

_____

Tamera Leighton, Executive Director
Del Norte Local Transportation Commission

RESOLUTION NO. 2022 10

DEL NORTE LOCAL TRANSPORTATION COMMISSION
ALLOCATION FOR ADMINISTRATIVE AND PLANNING PURPOSES

WHEREAS, the Del Norte Local Transportation Commission in its official capacity as the designated Regional Transportation Planning Agency, hereafter referred to as the RTPA, is allocating funds for administrative and planning purposes; and

WHEREAS, the projected reasonable administrative and planning expenses for the RTPA for fiscal year 2022-23 will be approximately the sum of $87,000; and

WHEREAS, the projected expenses are necessary and reasonable;

NOW, THEREFORE, BE IT RESOLVED THAT the RTPA hereby allocates the sum of $87,000 for administrative and planning purposes pursuant to the Public Utilities Code Section 99233.1 and hereby authorizes the RTPA to expend said funds on all reasonable and necessary administrative and planning purposes, including the following:

Work Element B1: Overall Work Program Development	$20,000
Work Element C2: Partnerships and Planning Agreements	$10,000
Work Element E1-3: TDA Administration and Fiscal Management	$57,000

PASSED AND ADOPTED by the Del Norte Local Transportation Commission on the 7th day of June 2022, by the following polled vote:

AYES:
NOES:
ABSTAIN:
ABSENT: Smith

_____
Darrin Short, Chair
Del Norte Local Transportation Commission

ATTEST:

_____
Tamera Leighton, Executive Director
Del Norte Local Transportation Commission

RESOLUTION NO. 2022 11

DEL NORTE LOCAL TRANSPORTATION COMMISSION RESOLUTION ALLOCATING FUNDS FOR PEDESTRIAN AND BICYCLE PURPOSES

WHEREAS, the Del Norte Local Transportation Commission, in its official capacity as the designated Regional Transportation Planning Agency, hereafter referred to as the RTPA, is allocating funds for pedestrian and bicycle purposes; and

WHEREAS, bicyclists and pedestrians have special needs in Del Norte County; and

WHEREAS, the RTPA has adopted an Active Transportation Plan;

NOW, THEREFORE, BE IT RESOLVED THAT the RTPA hereby allocates an amount not to exceed $20,520, and adjusted quarterly to actual income, for bicycle and pedestrian purposes pursuant to Public Utilities Code Section 99233.3 and directs that such funds be held until approval of a specific claim utilizing said funds pursuant to California Administrative Code Section 6655.2.

PASSED AND ADOPTED by the Del Norte Local Transportation Commission on the 7th day of June 2022, by the following polled vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____
Darrin Short, Chair
Del Norte Local Transportation

Commission
ATTEST:

_____
Tamera Leighton, Executive Director
Del Norte Local Transportation Commission

RESOLUTION NO. 2022 12

DEL NORTE LOCAL TRANSPORTATION COMMISSION RESOLUTION
AUTHORIZING THE EXECUTIVE DIRECTOR TO EXECUTE FUND TRANSFER AGREEMENTS WITH THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION FOR FISCAL YEAR 2021-22 STIP PLANNING, PROGRAMMING AND MONITORING PROGRAM

WHEREAS, the Del Norte Local Transportation Commission, on December 3, 2021, approved the 2022 Regional Transportation Improvement Program (RTIP) that allocated $28,000 for fiscal year 2022-23 for the STIP Planning, Programming and Monitoring (PPM) program; and,

WHEREAS, the Del Norte Local Transportation Commission is eligible to receive STIP funding through the Caltrans; and

WHEREAS, Del Norte Local Transportation Commission will use these funds to complete Work Elements C and D in the 2022-23 Overall Work Program; and

WHEREAS, Caltrans has requested the Del Norte Local Transportation Commission execute fund transfer agreements in order to receive the STIP funds.

NOW THEREFORE BE IT RESOLVED that the Executive Director and Legal Counsel are authorized to execute fund transfer agreements, applications, certifications and assurances, administrative amendments, and other related documents to receive fiscal year 2022-23 funds for the STIP Planning, Programming and Monitoring Program; and,

BE IT FURTHER RESOLVED that Del Norte Local Transportation Commission agrees to comply with all terms and conditions of the fund transfer agreements.

PASSED AND ADOPTED by the Del Norte Local Transportation Commission on the 7th day of June 2022, by the following polled vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____
Darrin Short, Chair
Del Norte Local Transportation Commission

ATTEST:

_____
Tamera Leighton, Executive Director
Del Norte Local Transportation Commission

900 Northcrest Drive, PMB 16
Crescent City, California 95531
www.dnltc.org

Del Norte Local Transportation Commission

Tamera Leighton, Executive Director
Tamera@DNLTC.org
Desk: (707) 465-3878
Cell: (707) 218-6424

Item G Staff Report

DATE: JUNE 7, 2022
TO: DEL NORTE LOCAL TRANSPORTATION COMMISSION
FROM: TAMERA LEIGHTON, EXECUTIVE DIRECTOR
SUBJECT: TRIENNIAL PERFORMANCE AUDIT AND RESPONSE

STAFF PROPOSED ACTION: By consensus, accept Triennial Performance Audit and Response to Audit.

BACKGROUND: Every three years a reviewer conducts a performance audit of DNTLC to determine compliance with the Transportation Development Act's (TDA) rules and regulations. Michael Baker International has completed their performance audit of DNLTC for the three years ending June 30, 2021.

DISCUSSION: The auditor reports that DNLTC has satisfactorily complied with the applicable state legislative mandates for Regional Transportation Planning Agencies (RTPAs). The reviewer has three recommendations, which have been considered. The audit and the proposed response to the audit are attached.

Del Norte Local Transportation Commission

FY 2019-2021
Triennial Performance Audit of Del Norte Local Transportation Commission

Final Draft

Submitted to

Del Norte Local Transportation Commission

June 2022

Submitted by

Michael Baker INTERNATIONAL

TABLE OF CONTENTS

Executive Summary

The Del Norte Local Transportation Commission (DNLTC; Commission) retained Michael Baker International to conduct its Transportation Development Act (TDA) performance audit for fiscal years (FY) 2018–19 through 2020–21. DNLTC is required by Public Utilities Code (PUC) Section 99246 to prepare and submit an audit of its performance on a triennial basis to the California Department of Transportation (Caltrans) as a condition of receiving TDA funding. TDA funds are expended for DNLTC administration and planning and for distribution to local jurisdictions for nonmotorized projects and operations of public transit systems.

This performance audit is intended to describe how well DNLTC is meeting its administrative and planning obligations under the TDA, as well as to present a description of its organizational management and efficiency. To gather information for the TDA performance audit, Michael Baker International conducted interviews with the executive director and Commission members, reviewed various documents, and evaluated DNLTC's responsibilities, functions, and performance of the TDA guidelines and regulations.

The audit comprises several sections, including compliance with TDA requirements, status of implementing prior audit recommendations, and review of functional areas. Findings from each section are summarized below, followed by recommendations based on our audit procedures.

Compliance with TDA Requirements

DNLTC has satisfactorily complied with the applicable state legislative mandates for Regional Transportation Planning Agencies (RTPAs).

Status of Prior Audit Recommendations

DNLTC partially implemented two of three prior that pertained to an annual TDA fiscal audit of the CTSA, and the development of performance metrics to evaluate the cost effectiveness of the CTSA. The recommendation to expand the role of the SSTAC is no longer applicable. The partially implemented recommendations are carried forward for full implementation.

Functional Review

1. DNLTC conducts its management of the TDA program in a competent, professional manner while operating in a complex intergovernmental environment.

2. The executive director advocates for funding and delivery of key infrastructure projects. Preparation and presentation at key meetings have resulted in significant funding being allocated to Del Norte, most recently $45 million for environmental work to further

improvements to Last Chance Grade on Highway 101 and being granted limited defendant-intervenor status in the case involving the Highway 199 Goods Movement and Bridge Project.

3. External and open communication with local communities, such as in-person meetings and workshops with stakeholder groups and agencies, as well as with each of the tribal governments, has bolstered efforts by the Commission. These outreach efforts demonstrate the collaboration between DNLTC staff and the commissioners to efficiently use existing agency resources.

4. The Overall Work Plan (OWP) developed by the executive director in collaboration with the Technical Advisory Committee (TAC) and the commissioners guides the annual work effort. A significant program that is contained in the OWP and implemented by DNLTC is a storm damage reduction planning element to collect and analyze information to assist with a regional drainage infrastructure audit. This work element builds upon the Climate Change and Stormwater Management Plan effort.

5. The most recent Regional Transportation Plan (RTP) for the Del Norte region was developed and adopted in March 2021. The 2020 RTP incorporates program-level performance metrics that are used to help select RTP project priorities and monitor how well the transportation system is functioning. DNLTC solicited comment on regional transportation issues from a wide variety of groups. Since the RTP development commenced shortly before the onset of the COVID-19 pandemic, an amended public outreach campaign was conducted to conform with social distancing guidelines. A community meeting was conducted over the Zoom videoconferencing platform and included a presentation on the draft RTP elements.

6. In January 2021, DNLTC adopted the *Coordinated Public Transit Plan*, which was an update to the *2015 Coordinated Public Transit – Human Services Transportation Plan for Del Norte County*. The Coordinated Plan was prepared by the Center for Business and Policy Research, University of the Pacific under contract to the state.

7. In an effort to go beyond the minimum requirements, DNLTC conducted the unmet transit needs process during the audit period. The process includes holding an unmet transit needs public hearing, consulting with the Social Services Transportation Advisory Council (SSTAC) and prioritizing unmet needs, reading, and reaffirming the definitions of "unmet transit needs" and "reasonable to meet," and adopting a resolution certifying the unmet needs findings.

Recommendations

Three recommendations are provided to improve DNLTC's administration and management of the TDA and its organization. Each recommendation is described in detail in the last section of this audit and is summarized below.

Performance Audit Recommendation	Background
1. Engage RCTA to commission an annual TDA fiscal audit of the CTSA.	This recommendation is carried forward from the prior performance audit for full implementation. DNLTC provides LTF under Article 4.5 to the designated CTSA, currently RCTA. During the audit period, DNLTC started requiring an audit of CTSA funds concurrent with the RCTA annual fiscal audit. The audit of CTSA funds is included in the *DNLTC Audited Financial Statements and Independent Auditor's Report* for fiscal years 2020 and 2021. References to the CTSA are contained the Statement of Changes in Net Positions – Fiduciary Funds. The fiduciary statements provide information about the cash balances and activities of these funds. These statements are separate from, and their balances are excluded from, the Commission's financial activities. However, a review of the annual RCTA TDA Funds Basic Financial Statements *(Audited)* completed during the audit period, do not include an audit of Article 4.5 funds that are claimed for the purpose of conducting CTSA activities. It is suggested that DNLTC continue to work the RCTA general manager in ensuring that CTSA funds are included the claimant's fiscal audit.
2. Foster the development of performance metrics to evaluate the cost effectiveness of the CTSA.	This recommendation is carried forward from the prior performance audit for full implementation. Performance metrics and baseline data have been included in *the RCTA Short-Range Transit Plan (SRTP), Fiscal Years 2019–20 to 2024–25* for existing general public transit services. Chapter 7 of the SRTP contains the CTSA Implementation Plan, which sets forth a plan for implementation of two new programs for RCTA to undertake as the CTSA for Del Norte County: Travel Training and ADA Eligibility Certification. However, the implementation plan does not include specific performance metrics for these two CTSA programs to evaluate their cost effectiveness. As the CTSA, RCTA launched the two programs in January 2020 after consultations with the SSTAC and DNLTC. In August 2019, the RCTA Board approved the procurement of GetGoing software and hosting from Jigsaw Analytics Group to manage CTSA activities. The software contains a module that can generate reports and dashboards. Having this tool will enable the CTSA to develop metrics and monitor performance of the two programs that were recently launched. It is suggested that DNLTC work with RCTA in the development of program metrics based on industry best practices.

Performance Audit Recommendation	Background
3. Develop strategies and protocols for succession planning.	The current DNLTC executive director has served in the role since 2006. The executive director is a contract employee and manages all agency matters internally and externally and also serves as the Clerk of the Board, providing notification of meetings and preparing Commission agendas. Staff reports to the Commission are concise and straightforward and provide the Commissioners with discussion of the topics. Commissioners interviewed for this audit have expressed high confidence in the executive director's ability to administer the affairs of the Commission in competent and thorough manner. One commissioner had questions about succession planning should the executive director decide to retire. It was suggested that the issue of succession planning be addressed in the OWP. Moreover, the executive director and the Commission are encouraged to discuss strategies and protocols regarding administrative succession at a Board retreat or during a regularly scheduled meeting.

Section I

Introduction – Initial Review of DNLTC Functions

The Del Norte Local Transportation Commission (DNLTC; Commission) retained Michael Baker International to conduct its Transportation Development Act (TDA) performance audit covering the most recent triennial period, fiscal years (FY) 2018–19 through 2020–21. DNLTC is required by Public Utilities Code (PUC) Section 99246 to prepare and submit an audit of its performance on a triennial basis to the California Department of Transportation (Caltrans) as a condition of receiving TDA funding.

This performance audit, as required by the TDA, is intended to describe how well DNLTC is meeting its administrative and planning obligations under the TDA.

Overview of Del Norte County and DNLTC

Del Norte County is located in the northwest corner of California, topographically defined by its rugged coastline and redwood forests. The county is bordered by Humboldt County to the south, the state of Oregon to the north, the Pacific Ocean to the west, and Siskiyou County to the east. The elevation ranges from sea level along the coast to 6,415 feet above sea level at Bear Mountain. The county's geographical land area encompasses 1,060 square miles and is traversed by 782 miles of roadway. The main north–south highway is US Highway 101 (US 101), which runs parallel to the coast and connects the county with Humboldt County and Oregon. The major east–west highway is US 199, which runs along the Smith River from US 101 toward the Oregon border. Other state highways that traverse the county include State Routes (SR) 169 and 197. The local economy is driven by industry sectors such as agriculture, including forestry and fisheries, construction, manufacturing, government, retail, and travel and recreation. A demographic snapshot of the county is presented in Table I-1.

Table I-1
Del Norte County Demographics

City/Jurisdiction	2020 Population*	Change from 2018 Population (%)	Population 65 Years & Older (%)	2022 California DOF Estimates	Land Area (in square miles)
Crescent City	4,464	+10.2%	10.80%	6,060	1.96
Unincorporated Areas	20,625	+1.5%	20.01%	21,158	1,058.24
Total Del Norte County	25,089	+2.9%	17.80%	27,218	1,060.20

Source: 2021 Del Norte County Economic and Demographic Profile for population; 2020 US Census for Population 65 Years and Older and Land Area; California Department of Finance 2022 Population Estimates
**Population data does not include incarcerated population.*

The population (non-incarcerated population) has increased over the past several years as indicated in the table. Over a three-year period from 2018–2020 (most recent data from 2021 Del Norte County Economic and Demographic Profile), the population in Crescent City increased by 10.2 percent, by 1.5 percent in the unincorporated areas, and by 2.9 percent countywide. The senior citizen population, comprising residents aged 65 and over, is 17.80 percent countywide using 2020 Census data. When including the population of Pelican Bay State Prison, the 2022 population for Crescent City is 6,060 as reported by the California Department of Finance. Unincorporated communities and census-designated places include Bertsch-Oceanview, Fort Dick, Gasquet, Hiouchi, Klamath, and Smith River. The local federally recognized Native American tribes are the Tolowa Dee-ni' Nation, Elk Valley Rancheria, Yurok Tribe, and Resighini Rancheria.

In its capacity as a Regional Transportation Planning Agency (RTPA) for TDA administration, DNLTC administers and allocates TDA revenues to eligible claimants, including local jurisdictions for bike and pedestrian projects, the Consolidated Transportation Services Agency (CTSA), and the transit operator. DNLTC's total budgeted TDA allocations for administration and plans/programs during the fiscal years addressed by this audit were $71,009 in FY 2018–19, $48,606 in FY 2019–20 and $46,233 in FY 2020–21. This represents a budget reduction from about 11.5 percent to 5.7 percent over the three-year period for TDA administration and plans/programs.

Role and Structure of DNLTC

DNLTC is one of 43 RTPAs in California, created pursuant to Section 29532 of the California Government Code. The principal purpose of RTPAs in rural areas is to:

- Prepare and adopt planning and programming documents required by law, and
- Allocate funds and administer various funding programs that involve cities, counties, and transit operators.

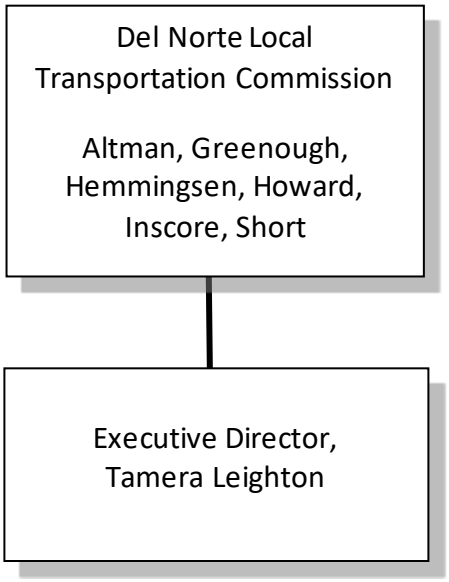
Specific to its role, DNLTC was created pursuant to Title 3, Division 3, Chapter 2 of California Government Code Section 29535. The mission of DNLTC is to prepare, plan, and fund transportation programs for the citizens of Del Norte County. As a local transportation commission serving a rural area, DNLTC is limited to dealing only with transportation planning issues. It is responsible for the planning and programming of transportation-related funding and projects including the Regional Transportation Plan (RTP) and the Regional Transportation Improvement Program (RTIP) required by state and federal law. In addition, DNLTC guides the following:

- Approval of the allocation of and claims for TDA funds;
- Provision for the distribution and oversight of Local Transportation Fund (LTF) monies;
- Preparation and submission of applications for transportation-related funds;
- Preparation of the annual Overall Work Program (OWP) and OWP Progress Reports;

- Intergovernmental review and comment on other Caltrans highway planning projects; and
- Encouragement of active citizen participation in the development and implementation of various transportation-related plans and programs.

DNLTC is administered by an executive director, who is a private planning and community development consultant retained by the Commission. An organization flow chart of DNLTC and its member agencies and committees during the audit period is shown in Figure 1.

Figure 1
DNLTC Organizational Chart



Source: DNLTC

DNLTC's offices are located in Crescent City. Meetings of the Commission are convened in the Del Norte Board of Supervisors Chambers located at the Flynn Administrative Center, 981 H Street in Crescent City. To meet the requirements of the Brown Act, DNLTC posts agendas at the City of Crescent City Public Works Department and the County of Del Norte Community Development Department. With the onset of the COVID-19 pandemic, meetings have been conducted over the Zoom videoconferencing platform. The executive director provides support to the Commission as well as to the advisory and standing committees as described below.

DNLTC – Commission: As the principal governing body, the Commission is composed of six members: three Del Norte County supervisors and three Crescent City council members. With the addition of the Caltrans District 1 director (or alternate), the Commission becomes the Policy Advisory Committee. The Policy Advisory Committee advises the Commission on all policy matters related to regional transportation planning. The Commission meets the first Tuesday of the month at 3:00 p.m.

Technical Advisory Committee (TAC): The TAC is composed of planning and public works representatives from the County of Del Norte and the City of Crescent City appointed by the Board of Supervisors and the City Council. In addition, there are representatives from Caltrans's Transportation Planning Branch, the California Highway Patrol, the Redwood Coast Transit Authority (RCTA), the Crescent City Harbor District, and the Yurok Tribe. The purpose of the TAC is to review the technical merits of various issues and projects as well as to coordinate the plans and development of regional transportation improvement programs of projects, transportation planning programs, and transportation funding programs. The committee meets the last Tuesday of the month at 2:00 p.m. in the Wastewater Treatment Plant Community Room located at 210 Battery Street in Crescent City.

Social Services Transportation Advisory Council (SSTAC): The SSTAC is DNLTC's only standing committee statutorily (PUC Section 99238) created to serve a broad representation of seniors, persons with disabilities, persons of limited means, social service agencies, and the transit dependent. The SSTAC is composed of the following representation:

- A representative of potential transit users who are disabled;
- A representative of the CTSA;
- A representative of the local social services provider for seniors;
- A representative of a services provider for disabled people;
- A representative of potential transit users who are 60 years of age or older;
- A representative of the local social services provider for people of limited means; and
- A representative of a minority group/geographic locale.

The council's three tenets are to participate in the identification of transit needs; to participate in the unmet transit needs process; and to advise the Commission on any major transit issues, including the coordination and consolidation of specialized transportation services. The SSTAC generally meets twice a year or as needed.

Transit Operator Oversight

During the audit period, DNLTC approved TDA fund claims for and monitored two transportation claimants, RCTA and the CTSA. RCTA, the county's public transportation service, is administered under a joint powers authority composed of the County of Del Norte and the City of Crescent City and is operated by a private contractor, First Transit. The RCTA general manager is an independent contractor who answers directly to the five-member RCTA Board. The general manager provides executive-level management services for RCTA and oversees the performance of First Transit. CTSA designation was assigned to RCTA by DNLTC in June 2018. In August 2019, the RCTA Board approved contracts (plus a software purchase) that enabled the January 2020 launch of two new CTSA programs that the RCTA Board and staff had been discussing and

planning over a two-year period. First Transit local RCTA operations staff provides extra CTSA support work and take the lead on the travel training program.

Audit Methodology

To gather information for this performance audit, Michael Baker International accomplished the following activities:

Document Review: Conducted an extensive review of documents, including various DNLTC files and internal reports, committee agendas, and public documents.

Interviews: Interviewed DNLTC's executive director and commissioners to gain their perspective about the agency's efficiency and economy.

Analysis: Evaluated the responses from the interviews as well as the documents reviewed about DNLTC's responsibilities, functions, and performance to TDA guidelines and regulations.

All of the activities described above were intended to provide Michael Baker International with the information necessary to assess DNLTC's efficiency and effectiveness in two key areas:

- Compliance with state TDA requirements
- Organizational management and efficiency

The remainder of this report is divided into four chapters. In Section II, Michael Baker International reviews the compliance requirements of the TDA administrative process. Section III describes DNLTC's responses to the recommendations included in the previous performance audit. In Section IV, we provide a detailed review of DNLTC's functions, while Section V summarizes our findings and recommendations.

Section II

DNLTC Compliance Requirements

Fourteen key compliance requirements are suggested in the *Performance Audit Guidebook for Transit Operators and Regional Transportation Planning Entities*, which was developed by Caltrans. Our findings concerning DNLTC's compliance with state legislative requirements are summarized in Table II-1.

TABLE II-1
DNLTC Compliance Requirements Matrix

Compliance Requirement	Reference	Compliance Effort
All transportation operators and city or county governments which have responsibility for serving a given area, in total, claim no more than those Local Transportation Fund (LTF) monies apportioned to that area.	Public Utilities Code, Section 99231	DNLTC accounts for its claimants' apportionment and has not allowed those claimants to claim more than what is apportioned for their areas. After allocations for DNLTC administration and planning and for bicycle and pedestrian projects, 5 percent of the remaining LTF revenue is allocated to the CTSA, with the remainder to RCTA. The Commission annually adopts a resolution approving each LTF allocation. **Conclusion: Complied.**
The RTPA has adopted rules and regulations delineating procedures for the submission of claims for facilities provided for the exclusive use of pedestrians and bicycles.	Public Utilities Code, Sections 99233.3 and 99234	DNLTC provides guidance on its TDA claims form for the submission of claims for pedestrian and bicycle projects. Although DNLTC has not formally adopted rules and regulations for delineating procedures for the submission of claims for facilities provided for the exclusive use of pedestrian and bicycle projects,

TABLE II-1 DNLTC Compliance Requirements Matrix		
Compliance Requirement	**Reference**	**Compliance Effort**
		DNLTC does adhere to the standard format for allocating claims under Article 3 toward such projects. Per the goals established in the *2017 Del Norte Active Transportation Plan*, DNLTC annually adopts a resolution allocating 2 percent of remaining LTF after the allocation for TDA administration and planning. The TAC decides which jurisdiction can claim the funds. Claimants then submit a written request and an invoice for reimbursement for bicycle and pedestrian projects undertaken. Claims are approved by the Commission through a resolution. **Conclusion: Complied.**
The RTPA has established a social services transportation advisory council. The RTPAs must ensure that there is a citizen participation process which includes at least an annual public hearing.	Public Utilities Code, Sections 99238 and 99238.5	The role of the SSTAC is to aid the Commission in its review of transit issues, with an emphasis on the annual identification of transit needs in Del Norte County. The SSTAC meets twice a year and as needed and participates on a number of issues including an annual public hearing to ensure citizen participation in the transit process and coordination of specialized transportation services. The SSTAC membership requirements conform to the

TABLE II-1 DNLTC Compliance Requirements Matrix		
Compliance Requirement	**Reference**	**Compliance Effort**
		stakeholder categories pursuant to PUC Section 99238, including geographic and minority representation. However, DNLTC noted that not all member positions were filled. **Conclusion: Complied.**
The RTPA has annually identified, analyzed, and recommended potential productivity improvements which could lower the operating costs of those operators which operate at least 50 percent of their vehicle service miles within the RTPA's jurisdiction. Recommendations include, but are not limited to, those made in the performance audit. • A committee for the purpose of providing advice on productivity improvements may be formed. • The operator has made a reasonable effort to implement improvements recommended by the RTPA, as determined by the RTPA, or else the operator has not received an allocation which exceeds its prior year allocation.	Public Utilities Code, Section 99244	Transit performance data is provided to DNLTC through annual reports produced by the RCTA and through the TDA claims submitted by the transit claimants. DNLTC has not established a separate committee for the purpose of advising on productivity improvements (e.g., transit operators committee); however, the TAC and SSTAC fulfill that function. DNLTC commissions short-range transit plans such as the update to the *Redwood Coast Transit Authority Short Range Transit Plan (SRTP) FYs 2019–20 to 2024–25*. The plan reviews the transit needs of the region and the cost-effectiveness of existing routes and services. RCTA has its own governing board, which is tasked with reviewing the productivity of transit services in Del Norte County. The triennial performance audit of RCTA also serves as a

TABLE II-1 DNLTC Compliance Requirements Matrix		
Compliance Requirement	**Reference**	**Compliance Effort**
		productivity improvement document. **Conclusion: Complied.**
The RTPA has ensured that all claimants to whom it allocates Transportation Development Act (TDA) funds submits to it and to the State Controller an annual certified fiscal and compliance audit within 180 days after the end of the fiscal year (December 27). The RTPA may grant an extension of up to 90 days as it deems necessary (March 26).	Public Utilities Code, Section 99245	DNLTC maintains records of all TDA claimants that submit an annual certified fiscal and compliance audit. The firm of R.J. Ricciardi, Inc. was retained to conduct the fiscal audits of the public transit claimant, RCTA. The following fiscal audits were completed: **RCTA:** FY 2019: January 20, 2020 FY 2020: February 19, 2021 FY 2021: December 24, 2021 **Conclusion: Complied.**
The RTPA has designated an independent entity to conduct a performance audit of operators and itself (for the current and previous triennium). For operators, the audit was made and calculated the required performance indicators, and the audit report was transmitted to the entity that allocates the operator's TDA monies and to the RTPA within 12 months after the end of the triennium. If an operator's audit was not transmitted by the start of the second fiscal year	Public Utilities Code, Sections 99246 and 99248	For the current three-year period, DNLTC has retained an independent entity, Michael Baker International, to conduct the audit of DNLTC and the transit operator. Michael Baker International was retained to conduct the previous audit for the three fiscal years that ended June 30, 2018. The operator audit calculated the required performance indicators, and the audit report was transmitted to Caltrans and DNLTC in May 2019. **Conclusion: Complied.**

TABLE II-1 DNLTC Compliance Requirements Matrix		
Compliance Requirement	**Reference**	**Compliance Effort**
following the last fiscal year of the triennium, TDA funds were not allocated to that operator for that or subsequent fiscal years until the audit was transmitted.		
The RTPA has submitted a copy of its performance audit to the Director of the California Department of Transportation. In addition, the RTPA has certified in writing to the Director that the performance audits of operators located in the area under its jurisdiction have been completed.	Public Utilities Code, Section 99246(c)	The performance audits are submitted via email to the Caltrans Division of Mass Transportation certifying completion of the performance audits from the previous triennium. DNLTC submitted the audits in May 2019. **Conclusion: Complied.**
The performance audit of the operator providing public transportation services shall include, but not be limited to, a verification of the operator's operating cost per passenger, operating cost per vehicle service hour, passengers per vehicle service mile, and vehicle service hours per employee, as defined in Section 99247. The performance audit shall include, but not be limited to, consideration of the needs and types of passengers being served and the employment of part-time drivers and the contracting with common carriers of persons operating under a	Public Utilities Code, Section 99246(d)	DNLTC commissions a performance audit of the transit operator providing service in its jurisdiction, which includes all required TDA performance measures plus additional indicators to further assess the operator's efficiency, effectiveness, and economy with the use of TDA funds. **Conclusion: Complied.**

TABLE II-1 DNLTC Compliance Requirements Matrix		
Compliance Requirement	**Reference**	**Compliance Effort**
franchise or license to provide services during peak hours, as defined in subdivision (a) of Section 99260.2.		
The RTPA has established rules and regulations regarding revenue ratios for transportation operators providing services in urbanized and new urbanized areas.	Public Utilities Code, Sections 99270.1 and 99270.2	The transit service in Del Norte County operates in a nonurbanized area. **Conclusion: Not Applicable.**
The RTPA has adopted criteria, rules, and regulations for the evaluation of claims under Article 4.5 of the TDA and the determination of the cost-effectiveness of the proposed community transit services.	Public Utilities Code, Section 99275.5	DNLTC has established criteria, rules, and regulations for the evaluation of claims filed under Article 4.5 of the TDA and the determination of the cost-effectiveness of the community transit services provided. The designated CTSA during the audit period was RCTA. **Conclusion: Complied.**
State transit assistance funds received by the RTPA are allocated only for transportation planning and mass transportation purposes.	Public Utilities Code, Sections 99310.5 and 99313.3	DNLTC allocates State Transit Assistance (STA) funds for transit operations and capital pursuant to state statutes. **Conclusion: Complied.**
The amount received pursuant to Public Utilities Code, Section 99314.3 by each RTPA for state transit assistance is allocated to the operators in the area of its	Public Utilities Code, Section 99314.3	DNLTC administers STA funds in accordance with the relevant PUC requirements (i.e., on the basis of population and operator revenues). **Conclusion: Complied.**

TABLE II-1 DNLTC Compliance Requirements Matrix		
Compliance Requirement	**Reference**	**Compliance Effort**
jurisdiction as allocated by the State Controller's Office.		
If TDA funds are allocated to purposes not directly related to public or specialized transportation services, or facilities for exclusive use of pedestrians and bicycles, the transit planning agency has annually: • Consulted with the Social Services Transportation Advisory Council (SSTAC) established pursuant to Public Utilities Code Section 99238; • Identified transit needs, including: ✓ Groups that are transit-dependent or transit-disadvantaged; ✓ Adequacy of existing transit services to meet the needs of groups identified; and ✓ Analysis of potential alternatives to provide transportation alternatives. • Adopted or reaffirmed definitions of "unmet transit needs" and "reasonable to meet";	Public Utilities Code, Section 99401.5	DNLTC allocates all of the TDA funds apportioned to Del Norte County to purposes directly related to public and/or specialized transportation services or facilities for the exclusive use of pedestrians and bicycles. Given that all TDA funding is allocated to the aforementioned purposes, DNLTC holds at least one annual public hearing for the purpose of soliciting comments on any unmet transit needs that may exist. The definitions of "unmet transit needs" and "reasonable to meet" have been adopted pursuant to Resolution No. 1988-1 and certified by Resolution No. 2018-18. The SSTAC reviews any public comments and requests received and creates a priority list of needs. A determination is made, and the findings reaffirmed through a resolution by the Commission. **Conclusion: Complied.**

TABLE II-1 DNLTC Compliance Requirements Matrix		
Compliance Requirement	**Reference**	**Compliance Effort**
• Identified the unmet transit needs and those needs that are reasonable to meet; • Adopted a finding that there are no unmet transit needs, that there are no unmet needs that are reasonable to meet, or that there are unmet transit needs including needs that are reasonable to meet. If a finding is adopted that there are unmet transit needs, these needs must have been funded before an allocation was made for streets and roads.		
The RTPA has caused an audit of its accounts and records to be performed for each fiscal year by the county auditor, or a certified public accountant. The RTPA must transmit the resulting audit report to the State Controller within 12 months of the end of each fiscal year and must be performed in accordance with the Basic Audit Program and Report Guidelines for California Special Districts prescribed by the State Controller. The audit shall include a determination of compliance with the TDA and	California Administrative Code, Section 6662	DNLTC has had an audit of its accounts and records performed for each fiscal year by a certified public accountant. The firm of Harshwal & Company LLP was retained to conduct the fiscal audits during the period. The completion dates were: FY 2019: November 20, 2019 FY 2020: November 20, 2020 FY 2021: October 18, 2021 DNLTC also maintains fiscal and accounting records and supporting papers for at least

TABLE II-1 DNLTC Compliance Requirements Matrix		
Compliance Requirement	**Reference**	**Compliance Effort**
accompanying rules and regulations. Financial statements may not commingle with other revenues or funds. The RTPA must maintain fiscal and accounting records and supporting papers for at least four years following fiscal year close.		four years following fiscal year close. **Conclusion: Complied.**

Findings from DNLTC Compliance Requirements Matrix

DNLTC has satisfactorily complied with the applicable state legislative mandates for RTPAs. One non-applicable compliance mandate involves the establishment of rules and regulations regarding revenue ratios for transit operators providing services in urbanized and newly urbanized areas.

To ensure compliance with unmet transit needs requirements, DNLTC holds at least one public hearing annually and consults with the SSTAC for the purpose of soliciting comments and prioritizing unmet needs. DNLTC also conducts a formal unmet transit needs process with the SSTAC and reaffirms the definitions of "unmet needs" and "reasonable to meet."

Section III

Responses to Prior Triennial Performance Audit Recommendations

This chapter describes the Commission's responses to the recommendations included in the prior triennial performance audit. For this purpose, each prior recommendation is described, followed by a discussion of DNLTC's efforts to implement the recommendation. Conclusions concerning the extent to which the recommendations have been adopted by the agency are then presented.

Prior Recommendation 1

Commission an annual TDA fiscal audit of the CTSA.

Background: DNLTC provides LTF under Article 4.5 to the designated CTSA, currently RCTA. During the audit period, the CTSA at the time, Community Assistance League and then Sutter Coast Hospital, were to provide assistance for non-emergency medical trips outside of Del Norte County. PUC Section 99245 states that the transportation planning agency is responsible to ensure that all claimants to whom it directs the allocation of funds submit an independent annual certified fiscal audit to the agency and to the State Controller. The requirement for this fiscal audit is applicable to all transportation providers receiving TDA funds. It was suggested that DNLTC work with the CTSA, now RCTA, to identify the means of including Article 4.5 funds in its annual financial audit should these funds be claimed separate from general public service and used for CTSA purposes. California Code of Regulations Sections 6664 and 6667 of the TDA describe the approach and data required in the fiscal audit of the claimant.

Actions taken by DNLTC:

During the audit period, DNLTC started requiring an audit of CTSA funds concurrent with the RCTA annual fiscal audit. The audit of CTSA funds is included in the *DNLTC Audited Financial Statements and Independent Auditor's Report* for fiscal years 2020 and 2021. References to the CTSA are contained the Statement of Changes in Net Positions – Fiduciary Funds. The fiduciary statements provide information about the cash balances and activities of these funds. These statements are separate from, and their balances are excluded from, the Commission's financial activities.

However, a review of the annual RCTA TDA Funds Basic Financial Statements *(Audited)* completed during the audit period, do not include an audit of Article 4.5 funds that are claimed for the purpose of conducting CTSA activities. It is suggested that DNLTC continue to work the RCTA general manager in ensuring that CTSA funds are included the claimant's fiscal audit.

Conclusion

This recommendation has been partially implemented and is carried forward for full implementation.

Prior Recommendation 2

Develop performance metrics to evaluate the cost effectiveness of the CTSA.

Background: LTF granted under PUC Section 99275.5 requires DNLTC to adopt performance criteria as a means to evaluate the cost effectiveness of the service. Community Assistance League, the CTSA during most of the audit period, provided DNLTC with basic statistics but did not quantify a standardized cost or performance measure that gauges cost efficiency or effectiveness. The most recent designation has been given to RCTA; the agency will propose cost effectiveness alternatives that will be reviewed by DNLTC as a condition of receiving TDA funding for CTSA activities. The standards for performance indicators, such as cost per trip and cost per mile to compare against actual, create a baseline for determining the relative service efficiency and effectiveness in use of the LTF revenue.

Actions taken by DNLTC:

Performance metrics and baseline data have been included in *the RCTA Short-Range Transit Plan (SRTP), Fiscal Years 2019–20 to 2024–25* for existing general public transit services. Chapter 7 of the SRTP contains the CTSA Implementation Plan, which sets forth a plan for implementation of two new programs for RCTA to undertake as the CTSA for Del Norte County: Travel Training and ADA Eligibility Certification. However, the implementation plan does not include specific performance metrics for these two CTSA programs. As the CTSA, RCTA launched the two programs in January 2020 after consultations with the SSTAC and DNLTC. In August 2019, the RCTA Board approved the procurement of GetGoing software and hosting from Jigsaw Analytics Group to manage CTSA activities. The software contains a module that can generate reports and dashboards. Having this tool will enable the CTSA to develop metrics and monitor performance of the two programs that were recently launched. It is suggested that DNLTC work with RCTA in the development of program metrics based on industry best practices.

Conclusion

This recommendation has been partially implemented and is carried forward for full implementation.

Prior Recommendation 3

Continue efforts to engage SSTAC members in broader transit issues.

Background: The primary purpose and gathering of the SSTAC is for the unmet transit needs process. The SSTAC meets twice a year to prioritize transit needs and review public comments received from the public hearing. DNLTC expressed concern that the meetings have limited agendas, leading to dwindling participation of required membership in complying with state TDA provisions. Attendance at the SSTAC meetings during the audit period shows only about half of required members, with other positions either not attending or vacant.

Strengthening the role and expanding the responsibilities of the SSTAC could reinvigorate interest and attendance. With the new designation of the CTSA, the SSTAC could work with RCTA in forming the duties and responsibilities of the CTSA and providing a sounding board in evaluating its performance over time. Other possibilities for engagement by the SSTAC could include reviewing and commenting on related transit studies such as the SRTP and other documents that have a social service transportation aspect, further engaging transit needs of the region common to the SSTAC's list of priority needs that are reaffirmed each year; emergency transportation preparedness planning; and recruiting strategies of new members to vacant/underutilized positions. State law also allows DNLTC to appoint additional members to the SSTAC beyond the required positions. One position that has been added in other counties is that of a youth/young adult transit user (such as a high school or college student) and/or a local social service provider for youth. SSTACs, by law, include transit users who are elderly and/or disabled. The potential addition of a youth/young adult representative to the SSTAC who represents a transit rider of limited means as well as a generation of young riders would add a new perspective to the discussion surrounding unmet transit needs priorities and coordination in the region.

Actions taken by DNLTC:

DNLTC staff continues to encourage full attendance in SSTAC meetings as well as efforts for council member recruitment. However, staff is reluctant to convene public meetings that are unnecessary or that have any aspect of make-work. The SSTAC is a council of the Commission and makes recommendations to the Commission. Council members have multiple responsibilities and fully committed schedules. SSTAC members may comment on policies or documents on behalf of their representative agencies without convening a public meeting and proposing a consensus recommendation to the Commission. It is often more appropriate for the individual agency to comment on a document or policy independent of other Council members. DNLTC contends that it is inappropriate to reach beyond the SSTAC mandate without a clear purpose and need for a consensus recommendation to DNLTC.

Conclusion

This recommendation is no longer applicable due to the DNLTC's contention that this would be beyond the scope and mission of the SSTAC.

Section IV

Detailed Review of DNLTC Functions

In this section, a detailed assessment of DNLTC's functions and performance as an RTPA during this audit period is provided. Adapted from Caltrans's *Performance Audit Guidebook for Transit Operators and Regional Transportation Planning Entities*, DNLTC's activities can be divided into the following activities:

- Administration and Management
- Transportation Planning and Programming
- TDA Claimant Relationships and Oversight
- Marketing and Transportation Alternatives
- Grant Applications and Management

Administration and Management

This section discusses the overall administration of DNLTC's functions, which include general administration, internal planning, and achievements, including the OWP, and interviews with commissioners.

General Administration

DNLTC is staffed by the executive director who serves as a contract employee and has been with the agency since 2006. The executive director manages all agency matters internally and externally and also serves as the Clerk of the Board, providing notification of meetings and preparing Commission agendas. Staff reports to the Commission are concise and straightforward and provide the Commissioners with discussion of the topics. The executive director prepares the Commissioners for the meeting so that there are no surprises regarding the topics.

The executive director advocates for funding and project delivery, participates in and is an invited speaker at local meetings such as the Chamber of Commerce and the Rotary, and appears in the local newspaper about DNLTC projects. The executive director also participates in regional working group meetings such as the Rural Counties Task Force and the North State Super Region, and in California Transportation Commission meetings to gain information and advance regional priorities. Preparation and presentation by the executive director at key meetings have resulted in significant funding being allocated to Del Norte, including $45 million for environmental work to further improvements to Last Chance Grade on Highway 101, a large and critical transportation

project for the county. The state has invested more than $55 million on temporary fixes in the past 10 to 12 years.

DNLTC uses outside assistance to provide additional administrative expertise such as accounting and information technology. This method of outsourcing administrative functions for a relatively small agency has worked well from both a workload and a financial viewpoint. Consultants are retained to conduct technical studies as needed to further transportation investments in the county.

Internal Planning and Achievements including the Overall Work Program

The issues and high-profile projects undertaken by DNLTC heighten the agency's visibility in the region and engage local officials who want to be assigned to the Commission in spite of small funding shares received by the Commission relative to other planning agencies in the state. DNLTC commissioners sit on other statewide rural committees, such as Rural County Representatives of California, and help advocate on behalf of the Commission to promote the agency's programs and goals, thereby providing additional outreach beyond just DNLTC staff. Project priority setting under limited funding constraints is a constant activity being worked on at DNLTC. The executive director works to keep the community focused on prioritizing projects and being available to the public. External and open communication with local communities, such as in-person meetings and workshops with stakeholder groups and agencies, as well as with each of the tribal governments, have bolstered efforts by the Commission. These outreach efforts demonstrate the collaboration between DNLTC staff and the commissioners to efficiently use existing agency resources. Some of the key infrastructure projects that DNLTC has advocated for are summarized as follows:

Last Chance Grade on US-101: Last Chance Grade is composed of a 3-mile segment of US-101 located in Del Norte County, extending between Wilson Creek to 9 miles south of Crescent City. This segment of highway has been subject to geological instability, which has resulted in recurring landslides and road failures. A feasibility study was initiated in March 2014 that involved scientific and economic analyses to assess the current conditions and develop possible alternatives. The study was completed in June 2015. As was mentioned earlier, the project is currently going through the environmental review process that will take up to 8 years. Possible alternatives include the construction of a tunnel bypass or a re-engineered roadway. This segment of roadway has been subject to intermittent closures and one-lane traffic restrictions. It is projected that the segment will reopen to two-way traffic by the summer of 2022. The DNLTC executive director serves on the Last Chance Grade project committee.

Highway 197/199 Goods Movement Project: Caltrans has proposed safety improvements to Highways 197 and 199 in Del Norte County. This series of projects includes adjustments to Highway 197 near Ruby Van Deventer County and on Highway 199 near the Narrows, at Washington Curve, and in the Patrick Creek area. Highway 199 is a critical corridor for Northern California and Southern Oregon residents, commuters, and tourists. The project is currently on hold pending a decision in *Friends of Del Norte et al. v. California Department of Transportation et al.* which was filed in the

United States District Court for the Northern District of California on January 5, 2018. Plaintiffs in the case are three environmental non-profits. On July 29, 2020, the Court granted the DNLTC limited defendant-intervenor status. The project has also received broad support from locally elected officials including a letter of support from officials in neighboring Curry County, Oregon. As of October 2021, the case was fully briefed, and a hearing was scheduled for February 17, 2022.

US-101 Fort Dick/Smith River – Dr. Fine Bridge: This project will replace the Dr. Fine Bridge over the Smith River on US-101 north of Crescent City. Built in 1940, the existing bridge is near the end of its useful life. A new bridge will better accommodate vehicles, pedestrians, and bicyclists. The project is anticipated to cost about $130 million.

DNLTC relies on State Rural Planning Assistance (RPA) funds, among other revenues including Planning, Programming, and Monitoring funds and TDA, to fund its activities. Policy constraints on RPA funds by Caltrans guidelines limit funding for rural transportation planning processes which are on a reimbursement basis, and no more than 25 percent of funding can be carried over into the following year. DNLTC has approached Caltrans about changing the allocation formula. The Commission has received $230,000 annually in RPA funding since 2012.

The Overall Work Program (OWP), developed by the executive director in collaboration with the TAC and the Commission, guides the annual work effort. The document is subject to federal and state oversight and approval. The plans and projects contained in each OWP vary slightly from year to year and are tied to factors including state and federal compliance, funding availability, and significant regional transportation issues.

Each work element and expected product is clearly laid out and described, with associated funding identified for each product. DNLTC staff use the separate tasks to bill against the planning grant funds. A significant program that is contained in the OWP and implemented by DNLTC is stormwater management as part of transportation mitigation, which is rare for an RTPA like DNLTC to undertake. According to the OWP, Del Norte is an emergency-prone county that shares forests and forest fires, fault lines and earthquakes, coastlines and tsunamis, and storms and storm damage. Considering these environmental factors, DNLTC completed a Climate Change and Stormwater Management Plan to conduct proactive planning to protect transportation infrastructure.

Amendments to the OWP are generated by DNLTC as conditions change over the year and a resolution is adopted by the Commission prior to submittal to Caltrans District 1. The final OWPs during the audit period contained the following work elements covering topics that are the responsibility of DNLTC. Additional specific tasks and studies are added as the need arises:

- Long Range Planning Coordination
- Overall Work Program
- Public Participation & Information Dissemination

- Transportation Improvement Program Development
- Transportation Development Act Administration & Fiscal Management
- Transit Planning
- Service Authority for Freeway Emergencies
- Regional Transportation Plan Update
- Safe Routes to School Program/Active Transportation Plan
- Pavement Management Plan
- Systemic Safety Analysis Report
- Climate Change & Stormwater Management Plan Completion
- Caltrans Information Element

The FY 2018–19 OWP contained 11 work elements, while the FY 2019–20 contained 10 work elements and the FY 2020–21 OWPs contained 8 work elements. The annual work program's direct expenditures ranged between $402,228 and $484,176 annually for the three-year audit period based upon the work program funding summary. The DNLTC also addresses the planning factors listed in the federal Fixing America's Surface Transportation (FAST) Act and includes a matrix in the OWP indicating which planning factors are addressed by each work program element. The FY 2019 OWP included a storm damage reduction planning element to collect and analyze information to assist with a regional drainage infrastructure audit. This work element builds upon the Climate Change and Stormwater Management Plan effort and addresses the new planning factor: Improve resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation. Commencing with the FY 2023 OWP, DNLTC will be adding an evacuation routes work element to address tsunami and wildfire threats.

There are ongoing efforts by DNLTC, shown in multiple OWPs, to address longer-term regional transportation issues. These include coordination and consultation with Native American tribes and rancherias for development on tribal lands and encouragement for active tribal participation in the transportation planning process; the 2020 Regional Transportation Plan (RTP), coordination with Caltrans regarding state highway planning and programming, including Last Chance Grade and the Gateway areas on US 101, and operational and safety improvements to US 199 and 197; planning and monitoring projects on the state highway system that are funded through the State Transportation Improvement Fund and High Priority Program; and planning and programming for the local streets and roads system with a focus on establishing baseline data for performance measures in alignment with the FAST Act.

DNLTC has been proactive to ensure that its administrative procedures align with Caltrans findings, including procurement practices of DNLTC staff and preparing signed worksheets of billing time that spend down RPA funds that could revert to Caltrans if unused. The DNLTC finance

committee takes a role to ensure internal controls are strong and transparent, and it reviews the billing timesheets of the executive director.

Interviews with Commissioners

Michael Baker International contacted and interviewed two board members from the Commission in April 2022. One commission member serves on the Del Norte County Board of Supervisors and the other commissioner serves as member on the Crescent City Council. Both Commission members expressed confidence in the abilities and background of DNLTC's executive director, including fiscal management and organizational development. Moreover, they expressed that the executive director fostered a collaborative, solutions-focused approach.

The executive director has provided strong advocacy for local projects, which has helped the Commission navigate controversial issues. Commissioners are kept apprised on transportation-related news, specifically on large projects such as Last Chance Grade and Gateway projects on US 101, Elk Valley Road, and Highway 197/199 Goods Movement. Local education and information sharing with the community and stakeholders are effectively done as demonstrated by the executive director's accessibility and community attendance at meetings. Meetings are well-run and have continued to be productive in light of the COVID-19 pandemic and the use of Zoom videoconferencing. The local collaboration leads to developing key policy documents, such as the OWP, which is approved by the Commission to guide DNLTC. DNLTC's administration has been professional in carrying out the mission of the agency in spite of the constrained financial resources that Del Norte County is faced with.

During the interviews, one commissioner had questions about succession planning should the executive director decide to retire. The executive director has distinguished herself as a passionate, high functioning and collaborative leader. It was suggested that the issue of succession planning be addressed in the OWP.

Transportation Planning and Programming

This functional area addresses planning functions required of DNLTC, including development of the RTP, RTIP, and transit planning and performance monitoring.

Regional Transportation Plan

The most recent RTP for the Del Norte region was developed and adopted in March 2021 and includes a requirement that the plan be updated every five years for the region to be eligible for state and federal funding.[1] The prior RTP was adopted in November 2016. Since the adoption of the prior RTP, there has been an update to the RTP Guidelines. The 2017 RTP Guidelines, adopted January 18, 2017, incorporated several key changes to the RTP process to address changes in the

[1] DNLTC conducts RTP updates every four years to follow local jurisdiction general plan and housing element updates.

planning process resulting from the MAP-21/FAST Act, SB 32, AB 1482, SB 246, SB 350, and Executive Orders B-16-12 and B-32-15.

The RTP was prepared by a consultant and is the guiding document for regionally significant transportation investments in the near term (1-10 years) and long term (10-20 years) for Del Norte County to efficiently move goods and people in the region. The RTP contains the required three elements: Policy Element, Action Element, and Financial Element. It identifies the top priority projects affecting a significant portion of the region while helping meet the regional goals set forth in the document. These priority projects include Last Chance Grade; US 101 Gateway and Traffic Calming; Front Street Revitalization; Requa Road; Elk Valley Road; Pebble Beach Drive Bike/Ped; and Washington Boulevard (Inyo to Dale Rupert). The RTP also identified and listed Del Norte Region Tribal Transportation Improvement Projects.

In 2015, the Rural Counties Task Force completed a study on the use of performance indicators for the 26 rural RTPAs in the task force in California. This study evaluated the current statewide performance monitoring metrics applicable to rural and small urban areas. The study identified and recommended performance measures more appropriate for the unique conditions and resources of rural and small urban places, like Del Norte County. The 2020 RTP incorporates program-level performance metrics that are used to help select RTP project priorities and monitor how well the transportation system is functioning. The seven performance measures are summarized as follows:

- **Performance Measure #1 – Transportation Systems Investment:** Monitors the condition of the roadways in the Del Norte region, which can be used in deciding transportation system investment.
- **Performance Measure #2 – Preservation/Service Fuel Use/Travel Use/Travel Distance/Time/Cost:** Monitors the condition of the roadways in the Del Norte region through pavement condition. Pavement condition should be monitored every 2 years.
- **Performance Measure #3 – Safety:** monitors safety through the total collision count and should be monitored annually.
- **Performance Measure #4 – Mode Share/Split:** monitors transportation mode and mode share to understand how State and County roads function based on modes used.
- **Performance Measure #5 – Transit:** monitors the cost-effectiveness of transit in the Del Norte region. This performance measure should be monitored annually.
- **Performance Measure #6 – Congestion/Delay/Vehicle Miles Traveled:** monitors how well State and County Roads are functioning based on peak volume/capacity and vehicle miles travelled (VMT).
- **Performance Measure #7 – Land Use:** monitors the efficiency of land use and is reported over time since 2000.

A total of approximately $661.4 million has been proposed for roadway, bridge, bike/pedestrian, transit, and aviation projects for the 20-year horizon of the RTP. This only includes projects with cost estimates. Many projects, specifically in the long-range project lists, do not have associated estimates. There is a funding shortfall of approximately $109.3 million over the 20-year RTP

period. Most of the forecasted deficit for the unconstrained plan is from roadway projects, followed by aviation and bridge projects. Transit and nonmotorized projects are projected to be whole for the short and long term. Short-range projects (years 1-10) are expected to have sufficient revenue under the constrained financial scenario; however, long-term shortfalls are expected in years 11-20 and will be addressed in future RTP updates.

As a critical component to plan development, DNLTC solicited comment on regional transportation issues from a wide variety of groups, including the general public, elected officials, and tribal governments. Since the RTP development commenced shortly before the onset of the COVID-19 pandemic, an amended public outreach campaign was conducted to conform with social distancing guidelines. A community meeting was conducted on October 20, 2020, over the Zoom videoconferencing platform. The community meeting included a presentation on the draft RTP elements: Policies, Action and Financial. There were 15 attendees and 4 panelists in attendance. The community meeting was advertised through email blasts to stakeholders, social media posts over Facebook and Twitter, flyers distributed throughout the community, and a dedicated project website (DelNorteRTP.com).

The draft RTP was vetted by the TAC through a series of working sessions and workshops. DNLTC also actively solicited input from the four Native American tribes located in the county. Outreach materials for the 2020 RTP update, including notices, meetings, minutes, and agendas, were posted on the DNLTC website, and inserted in the RTP document. An online Del Norte transportation questionnaire was administered via SurveyMonkey to gather community input for the plan update. DNLTC modeled its public participation plan after the California Transportation Plan to coordinate outreach with the community, including Native American tribes, and works with local organizations with strong electronic mailing lists, such as schools and child health and education services, to solicit survey responses. The Final RTP included a focused list of financially constrained regional transportation capital improvement projects, which are viewed by DNLTC and the community as the highest priorities for the region. The highest priority projects are then programmed in the RTIP for funding.

Regional Transportation Improvement Program

DNLTC is responsible for preparing the RTIP for Del Norte County projects that have been approved for federal and state funding. DNLTC followed the adopted State Transportation Improvement Program (STIP) guidelines and uses a reporting template created for rural counties that is accepted by the state. DNLTC, in coordination with member agencies and the TAC, prepare the RTIP every five years, identifying capital and other improvement projects for programming. The OWP identified a Transportation Improvement Program Development work task during FY 2017–18 to update and deliver the next RTIP with assistance from a consultant. The 2020 RTIP prepared during the audit period was adopted in December 2019 and covers the STIP cycle from July 1, 2020, through June 30, 2025. The 2020 STIP Fund Estimate identified a regional formula distribution for Del Norte County of $823,000 through FY 2024–25. DNLTC prepared the 2020 RTIP in consultation with city and county public works staff, Caltrans District 1, and the general public.

DNLTC is only programming Planning, Programming and Monitoring funds at this time to assist with project readiness and project delivery. DNLTC acknowledged overprogramming for the US Highway 199 operational improvement project through a $19.4 million STIP advance. This project, a bridge replacement and curve realignment, continues to receive widespread support in the region and DNLTC continues to place it as its top priority through construction. Caltrans is delivering this on-system bridge replacement project for a bridge that was built in 1926 and is in the top 1 percent of the oldest bridges on the state highway system. However, DNLTC is concerned about Caltrans's ability to deliver. The project has been successfully delayed in the "litigation phase" that is prevalent in District 1 and has placed the project at risk. DNLTC is advocating for this project and has sought to have a more influential role in advancing the project.

The 2020 RTIP was prepared in accordance with DNLTC's Public Participation Plan. This process included development in open public forum via the TAC. Each proposed new project is the result of numerous public meetings and high levels of participation and attendance by the public. The public had and will continue to have the opportunity to provide input in the planning and programming process.

The Commission submitted its proposed 2022 RTIP to the California Transportation Commission in December 2021. The Del Norte region is scheduled to receive $1,587,000 in formula share distribution through FY 2027–28 according to the 2022 STIP Fund Estimate. As with the 2020 RTIP, DNLTC only programmed Planning, Programming and Monitoring funds to assist with project readiness and delivery.

Transit Planning and Performance Monitoring

DNLTC transit planning and monitoring are engaged through various approaches. The principal transit planning document is the *Redwood Coast Transit Authority Short Range Transit Plan (SRTP) FYs 2019–20 to 2024–25,* which was adopted in June 2019. The SRTP has a five-year planning horizon that guides improvements to public transit programs. The plan is composed of an introduction, nine chapters, and an appendix. The appendix contains a sample travel training pre-travel interview form and waiver related to the CTSA implementation plan.

The SRTP process was composed of two phases. The first phase included an assessment of existing conditions in the County and of the transit system, public involvement and stakeholder outreach, market research of existing and potential passengers, evaluation of current transit needs, and development of system goals and performance standards. The second phase of the SRTP process built on the findings summarized in the first phase and evaluated and developed a five-year plan for service alternatives, capital assets, system finances, marketing activities, CTSA activities, and the administrative management model.

Unique to the SRTP, were the chapters devoted to the implementation of the CTSA and a marketing analysis that included the findings from the 2018 market research study conducted by Dr. Jon Shapiro that focused on visitors to the National and State Parks. The CTSA implementation

plan provides an in-depth approach on the development of the ADA eligibility certification and travel training programs.

Public outreach included a 3-day on-board survey campaign that received 300 responses, community stakeholder and rider focus groups and discussions with National Park personnel and visitors. Feedback from the ridership was generally positive. The SRTP also examined the feasibility for more customer service amenities at the Cultural Center such as mobile kiosks and public restrooms. The plan contains nine sections that address transit demand, service and management alternatives, marketing, financial projections, and capital alternatives of the public transit system.

In June 2021, RCTA proposed a "mini-update" to refresh the 2019 SRTP due to changed conditions and to address electric bus procurement and charging infrastructure (engineering/final design) and include a project to address passenger experience and security concerns by developing a staffed Cultural Center transit hub. In addition, the update would include a financial assessment of the Del Norte's TDA apportionment and of potential revenue capture from e-commerce activities.

DNLTC receives agendas from RCTA that include performance reports. RCTA produces annual operating and financial reports that provide the operating status. The operating and financial report evaluates the performance of Redwood Coast Transit and includes comparable data for the transit system for the current year and the previous fiscal year. The farebox recovery measure in the reports and ridership changes are key performance figures reviewed by the executive director. The annual TDA claim for funds submitted by the RCTA to DNLTC during the audit period provide another set of documents that show evidence for the need for public funding and the performance information to substantiate the need. Budgets, CHP compliance reports, project cost by funding source, and performance measures are included in the claim that summarize the claimant's operational status. DNLTC considers these documents among other information when monitoring transit performance.

In January 2021, DNLTC adopted the *Coordinated Public Transit Plan*, which was an update to the *2015 Coordinated Public Transit – Human Services Transportation Plan for Del Norte County*. The Coordinated Plan was prepared by the Center for Business and Policy Research, University of the Pacific under contract to the state. Projects selected for funding under Federal Transit Administration (FTA) Section 5310 must be included in a coordinated public transportation plan. According to the FTA, this Coordinated Plan should be a unified, comprehensive strategy for public transportation service delivery that identifies the transportation needs of 1) individuals with disabilities, 2) seniors, and 3) individuals with limited incomes. The plan lays out strategies for meeting these needs and prioritizing services.

The SSTAC reviewed the updated study because the subject matter and findings pertained to the groups represented by the SSTAC members. The coordinated plan developed a unified, comprehensive strategy for public transportation service delivery that identifies the

transportation needs of individuals with disabilities, seniors, and individuals with limited incomes. The update was shaped by the four required elements of the coordinated plan:

- Unmet transportation needs for transportation disadvantaged populations (seniors, people with disabilities, and people with low incomes)
- Inventory of existing transportation services
- Strategies for improved service and coordination
- Identify priorities based on resources, time, and feasibility

The *Del Norte Active Transportation Plan,* which was adopted in May 2015 and amended in September 2017, provides a vision for the future active transportation network in the Del Norte region. It is a regional strategy that builds on previous studies and plans, and holistically evaluates active transportation projects and policies. DNLTC and its member agencies have been at the forefront of incorporating complete street and active transportation elements in their planning efforts following the Complete Streets Act of 2008, having completed a number of related plans and reports over the years related to trail planning, bicycle facilities, transit plans, traffic calming, safe routes to school, and goals and policies in the RTP update. The purpose of the Active Transportation Plan is to consolidate the findings of these studies and evaluate them holistically in an effort to prioritize active transportation improvements and programs that will have the biggest benefit to the Del Norte region. The results of the plan guide future updates to the circulation elements of both the Del Norte County and Crescent City General Plans. Sunset Circle Coastal Trail Project is one example project receiving recent Active Transportation Program funding.

TDA Claimant Relationships and Oversight

Two entities claimed TDA funds for transit purposes: RCTA, the countywide public transit provider; and the designated CTSA, which during the audit period was RCTA.

As the RTPA, DNLTC is responsible for the administration of the TDA program. This functional area addresses its administration of the provisions of the TDA. The subfunctions described include administration of the program, provision of technical and managerial assistance, and the solicitation of unmet transit needs. DNLTC reported no significant changes in its TDA administration and claims processes.

TDA Administration

The uses of TDA revenues apportioned to Del Norte County flow through a priority process prescribed in state law. The grand total available for LTF allocation each year takes into account the prior year's uncommitted balance carried forward, plus the sales tax revenue estimated for the year. A pedestrian and bike fund reserve is factored out from the prior year balance to arrive

at available net funds for the current year. In order of priority, LTF are allocated as follows during the audit period:

- DNLTC TDA fund administration and planning (6 to 12 percent of total LTF)
- Bicycle and pedestrian facilities (2 percent)
- CTSA (5 percent)
- Public transit (remaining LTF, plus all STA apportionments)

Prior to apportionment of funds to the bicycle and pedestrian facilities program and the transit systems, DNLTC is able to claim TDA revenues for administration of the fund and for regional transportation planning and programming purposes. According to the OWP, the LTF revenue for the Commission is applied toward TDA and fiscal management activities, including maintenance of records, data transcription and legal counsel, state controller reports, TDA fiscal and performance audits, TDA findings and allocations, the unmet needs process, and SSTAC support. It is also used for planning and programming activities. During the audit period of FYs 2019 through 2021, DNLTC expended the actual amounts shown in Table IV-1.

Table IV-1
LTF Revenue Claims by DNLTC for Administration and Planning

Fiscal Year	LTF Claim
2019	$71,009
2020	$48,606
2021	$46,233

Source: DNLTC Annual Financial Statements

Technical and Managerial Assistance to Claimants

The executive director is available to assist the claimants with their TDA packets. A checklist of items to submit with the claim is included to assist the claimants with organizing their information. Amended claims are submitted when there are modifications to the original submission. The claims checklist includes a due date for the submittal, which is during the month of May preceding the claim year. During the audit period, RCTA submitted its claim either on this date or slightly after.

LTF revenue set aside for bicycle and pedestrian projects, which is limited to 2 percent annually, is typically built up over the years until enough funding accumulates. A reserve fund is accounted for in each year's LTF apportionment. Allocations to bicycle and pedestrian reserve were $11,346 for FY 2019; $13,336 for FY 2020; and $15,577 for FY 2021. The TAC evaluates and decides which projects receive the funds. The TAC will request a balance of the available funds to determine whether there is an available project.

On an annual basis during this audit period, DNLTC was responsible for managing the apportionment of between $655,282 and $854,856 in LTF revenues and between $201,110 and $237,537 in STA funds (based on the DNLTC TDA Estimate Worksheet). Prior year LTF balances are added to the total apportionment amounts on top of the sales tax estimates for the current year. All STA is allocated to RCTA by statute as the lone public transit service in the region. For LTF, RCTA receives between 82 and 86 percent of the revenue after allocations to DNLTC, bicycle/pedestrian facilities, and CTSA. DNLTC prepares and distributes the funding estimates of apportionment and the TDA claim packet with the necessary forms. The TDA claims are adopted by resolution by the board of each agency prior to submission to DNLTC.

As a general rule, operator claims must include supplemental information on a number of TDA requirements, including attachment of specific documentation such as the approved budget and resolution, prior year revenues and expenditures, CHP terminal inspection certification, and signed standard assurances. A review of the claims during the audit period shows that RCTA has included the supplemental information as requested in the DNLTC claim including the standard assurances list on which RCTA initializes each item to certify that all conformance requirements are satisfied to receive both LTF and STA funds.

Unmet Transit Needs

The conduct of the annual unmet transit needs process is required by the TDA (PUC Section 99401.5) where claims can be made for streets and roads. Although there are no such claims in Del Norte County, DNLTC, in an effort to go beyond the minimum requirements, conducted the unmet transit needs process during the audit period. The process includes holding an unmet transit needs public hearing, consulting with the SSTAC and prioritizing unmet needs, reading, and reaffirming the definitions of "unmet transit needs" and "reasonable to meet," and adopting a resolution certifying the unmet needs findings. The SSTAC meets twice a year to conduct the unmet transit needs procedures, in April and June, to identify, review, and approve priority unmet needs. The SSTAC's prioritization of needs in the region has resulted in the following priority order:

1. Non-Emergency Medical Transportation
2. Transit Training
3. Public Information & Education
4. After Hours Transit Services
5. Bus Shelters at More Stops

The aforementioned list needs to be reconsidered on an annual basis and a confirmed or new determination for "reasonable to meet" must be made by DNLTC.

The unmet transit needs definition that is reaffirmed by DNLTC reads as:

1. Public transportation and specialized transportation service needs that are identified in the latest update of the Regional Transportation Plan and have not been implemented or funded; and

2. Needs identified by community members which have substantial community support expressed through such means as community organizations, at public meetings, etc.

The reasonable to meet definition that is reaffirmed by DNLTC reads as:

1. There are adequate TDA resources available to the claimant to provide an adequate level of service in relation to the identified need; and

2. The cost to provide adequate service is supportable in terms of project benefits; and

3. Project farebox revenues will be sufficient to comply with Transportation Development Act provisions relating to farebox revenues as a percentage of operating costs; and

4. Existing transit operators are capable of expending their service; or establishment of a new service is logistically feasible.

Public hearings on unmet transit needs are held each July in the Del Norte County Board of Supervisors Chambers. Written comments were also accepted by those July dates. The resolutions adopted by DNLTC for the audit period concluded that under the process there are no unmet transit needs that are reasonable to meet.

Marketing and Transportation Alternatives

For an agency of its size, DNLTC has developed a comprehensive outreach effort to elicit support for its mission and to educate the public of its role in the delivery and maintenance of Del Norte County's transportation infrastructure. DNLTC's public affairs and community engagement are conveyed through its website, publications, and collaborative efforts with its partner agencies.

The updated DNLTC website (http://www.dnltc.org/) provides an extensive array of information about the Commission's projects and programs, the Commission's structure and governing body, and upcoming meetings and workshops. It contains DNLTC's mission statement, a public comment form, regional news, funding sources, current planning documents, meeting minutes from the Commission and each committee, links to transit and partner agencies, and the latest transportation developments. The public comment form (http://www.dnltc.org/comments) enables maps and visuals to be viewed on regional issues and projects for more meaningful public feedback and comment. The platform is connected with social media and networking sites Facebook, WhatsApp, and Twitter for greater community access. Information about each project location is available by clicking on a county map with Google views (https://delnortetransportation.commonplace.is/), and links are available for comment. DNLTC's Title VI policy is included in its study materials.

The DNLTC Public Participation Plan and Policy outlines a process for public engagement as it pertains to transportation planning and other activities of the Commission. Plan sections address the regulatory setting pursuant to federal and state statutes, outreach tools and techniques, publications, evaluation, and monitoring efforts. The six policies guiding the Commission's public engagement are found toward the end of the document. DNLTC holds public hearings whenever significant decisions need to be made. Local print and broadcast media are monitored on a regular basis, and persons and organizations known to be interested in specific issues are kept informed and invited to public hearings dealing with those issues. The use of internet media and online platforms such as the public comment page on the DNLTC website have grown in use and complement the in-person meetings and stakeholder events held by the executive director.

As part of its external affairs outreach, DNLTC participates in several collaborative efforts with local Native American tribal entities and other rural RTPAs around the state. The executive director has engaged in extensive tribal involvement and coordination with the Tolowa Dee-ni' Nation, Elk Valley Rancheria, Yurok Tribe, and Resighini Rancheria. The Elk Valley Rancheria and Yurok Tribe have requested matching funding from DNLTC for transportation projects in partnership with the County. Tolowa Dee-ni' Nation has not requested funding but is voicing concern for local highway work by Caltrans.

The Commission has also been involved in the Rural Counties Task Force, which is a consortium of 26 rural RTPAs and LTCs that work with together with the California Transportation Commission in providing a direct opportunity for the small counties to remain informed, have a voice, and become involved with changing statewide transportation policies and programs. Del Norte County is also part of the North State Super Region, which is an alliance of 16 counties in Northern California that have decided to share information and collaborate in an effort to become a larger voice for state and federal funding policies and priorities.

Grant Applications and Management

DNLTC serves as the clearinghouse for federal grant applications that are reviewed to determine whether there is any duplication of effort among agencies and that there is no conflict with local plans and policies. The Commission's role for Del Norte County is to review and be an integral part of state and federal funding assistance that promotes interjurisdictional coordination among its partner agencies such as Caltrans, RCTA, and the local tribal entities. Although RCTA applies for rural federal funding for operations and capital, the funding application requires certification from DNLTC as the transportation planning agency for the programming of funds for the project. A Certifications and Assurances form of the regional agency is executed and filed by DNLTC.

DNLTC generally distributes funds from TDA, Regional Surface Transportation Program, the STIP, and Department of Motor Vehicle fees toward transportation projects. Since RCTA is a subrecipient of Federal Transit Administration grant funding through Caltrans for operations and capital, DNLTC does not generally monitor such grant awards. RCTA has been effective in identifying grant opportunities and has worked more collaboratively with DNLTC in reporting transit grants and milestones. Both RCTA and DNLTC staff confirmed the improved cooperation

and communication and grant reporting responsibility. The executive director reports no outstanding issues. DNLTC retains a set of financial and accounting policies and procedures including internal control policies to safeguard the assets of the Commission, and contract and grant management processes.

DNLTC's adopted resolutions for alternative transportation grant funds include for Federal Transit Administration 5311, California Office of Emergency Services, Low-Carbon Transit Operations Program, State of Good Repair, and State Active Transportation Program.

Section V

Findings and Recommendations

The following material summarizes findings obtained from the triennial audit covering fiscal years 2019–20 through 2020–21. A set of recommendations is then provided.

Findings

1. DNLTC conducts its management of the TDA program in a competent, professional manner while operating in a complex intergovernmental environment.

2. DNLTC has satisfactorily complied with the applicable state legislative mandates for RTPAs.

3. Of the three prior performance audit recommendations, DNLTC partially implemented two that pertained to an annual TDA fiscal audit of the CTSA, and the development of performance metrics to evaluate the cost effectiveness of the CTSA. The recommendation to expand the role of the SSTAC is no longer applicable. The partially implemented recommendations are carried forward for full implementation.

4. The executive director advocates for funding and delivery of key infrastructure projects. Preparation and presentation at key meetings have resulted in significant funding being allocated to Del Norte, most recently $45 million for environmental work to further improvements to Last Chance Grade on Highway 101 and being granted limited defendant-intervenor status in the case involving the Highway 199 Goods Movement and Bridge Project.

5. External and open communication with local communities, such as in-person meetings and workshops with stakeholder groups and agencies, as well as with each of the tribal governments, have bolstered efforts by the Commission. These outreach efforts demonstrate the collaboration between DNLTC staff and the commissioners to efficiently use existing agency resources.

6. The OWP, developed by the executive director in collaboration with the TAC and the commissioners, guides the annual work effort. A significant program that is contained in the OWP and implemented by DNLTC is a storm damage reduction planning element to collect and analyze information to assist with a regional drainage infrastructure audit. This work element builds upon the Climate Change and Stormwater Management Plan effort.

7. The most recent RTP for the Del Norte region was developed and adopted in March 2021. The 2020 RTP incorporates program-level performance metrics that are used to help select RTP project priorities and monitor how well the transportation system is functioning. DNLTC solicited comment on regional transportation issues from a wide variety of groups. Since the RTP development commenced shortly before the onset of the COVID-19 pandemic, an amended public outreach campaign was conducted to conform with social distancing

guidelines. A community meeting was conducted over the Zoom videoconferencing platform and included a presentation on the draft RTP elements.

8. In January 2021, DNLTC adopted the *Coordinated Public Transit Plan*, which was an update to the *2015 Coordinated Public Transit – Human Services Transportation Plan for Del Norte County*. The Coordinated Plan was prepared by the Center for Business and Policy Research, University of the Pacific under contract to the state.

9. In an effort to go beyond the minimum requirements, DNLTC conducted the unmet transit needs process during the audit period. The process includes holding an unmet transit needs public hearing, consulting with the SSTAC and prioritizing unmet needs, reading, and reaffirming the definitions of "unmet transit needs" and "reasonable to meet," and adopting a resolution certifying the unmet needs findings.

Recommendations

1. Engage RCTA to commission an annual TDA fiscal audit of the CTSA.

This recommendation is carried forward from the prior performance audit. DNLTC provides LTF under Article 4.5 to the designated CTSA, currently RCTA. During the audit period, DNLTC started requiring an audit of CTSA funds concurrent with the RCTA annual fiscal audit. The audit of CTSA funds is included in the *DNLTC Audited Financial Statements and Independent Auditor's Report* for fiscal years 2020 and 2021. References to the CTSA are contained the Statement of Changes in Net Positions – Fiduciary Funds. The fiduciary statements provide information about the cash balances and activities of these funds. These statements are separate from, and their balances are excluded from, the Commission's financial activities.

However, a review of the annual RCTA TDA Funds Basic Financial Statements *(Audited)* completed during the audit period, do not include an audit of Article 4.5 funds that are claimed for the purpose of conducting CTSA activities. It is suggested that DNLTC continue to work the RCTA general manager in ensuring that CTSA funds are included the claimant's fiscal audit.

2. Foster the development of performance metrics to evaluate the cost effectiveness of the CTSA.

This recommendation is carried forward from the prior performance audit. Performance metrics and baseline data have been included in *the RCTA Short-Range Transit Plan (SRTP), Fiscal Years 2019–20 to 2024–25* for existing general public transit services. Chapter 7 of the SRTP contains the CTSA Implementation Plan, which sets forth a plan for implementation of two new programs for RCTA to undertake as the CTSA for Del Norte County: Travel Training and ADA Eligibility Certification. However, the implementation plan does not include specific performance metrics for these two CTSA programs to evaluate their cost effectiveness. As the CTSA, RCTA launched the two programs in January 2020 after consultations with the SSTAC and DNLTC. In August 2019, the RCTA Board approved the procurement of GetGoing software and hosting from Jigsaw Analytics Group to manage CTSA activities. The software contains a module that can generate reports and dashboards. Having this tool will enable the CTSA to develop metrics and monitor performance of the two programs that were recently launched. It is suggested that DNLTC work with RCTA in the development of program metrics based on industry best practices.

3. Develop strategies and protocols for succession planning.

The current DNLTC executive director has served in the role since 2006. The executive director is a contract employee and manages all agency matters internally and externally and also serves as the Clerk of the Board, providing notification of meetings and preparing Commission agendas. Staff reports to the Commission are concise and straightforward and

provide the Commissioners with discussion of the topics. Commissioners interviewed for this audit have expressed high confidence in the executive director's ability to administer the affairs of the Commission in competent and thorough manner. One commissioner had questions about succession planning should the executive director decide to retire. It was suggested that the issue of succession planning be addressed in the OWP. Moreover, the executive director and the Commission are encouraged to discuss strategies and protocols regarding administrative succession at a Board retreat or during a regularly scheduled meeting.

900 Northcrest Drive, PMB 16
Crescent City, California 95531
www.dnltc.org

Del Norte Local Transportation Commission

Tamera Leighton, Executive Director
Tamera@DNLTC.org
Desk: (707) 465-3878
Cell: (707) 218-6424

NOTE TO FILE

Response to the FY 2019-2021 Triennial Performance Audit of DNLTC

Submitted by Tamera Leighton, Executive Director

Authorized by Del Norte Local Transportation Commission on June 7, 2022

Audit Recommendation 1: Engage RCTA to commission an annual TDA fiscal audit of the CTSA.

This recommendation is carried forward from the prior performance audit. DNLTC provides LTF under Article 4.5 to the designated CTSA, currently RCTA. During the audit period, DNLTC started requiring an audit of CTSA funds concurrent with the RCTA annual fiscal audit. The audit of CTSA funds is included in the DNLTC Audited Financial Statements and Independent Auditor's Report for fiscal years 2020 and 2021. References to the CTSA are contained the Statement of Changes in Net Positions – Fiduciary Funds. The fiduciary statements provide information about the cash balances and activities of these funds. These statements are separate from, and their balances are excluded from, the Commission's financial activities.

However, a review of the annual RCTA TDA Funds Basic Financial Statements (Audited) completed during the audit period, do not include an audit of Article 4.5 funds that are claimed for the purpose of conducting CTSA activities. It is suggested that DNLTC continue to work the RCTA general manager in ensuring that CTSA funds are included the claimant's fiscal audit.

Action Steps and Timeframe:

Staff will work with Redwood Coast Transit Authority to determine a method for a clear and distinct audit of the CTSA designated funds within the overall Redwood Coast Transit Authority audit.

Audit Recommendation 2: Develop performance metrics to evaluate the cost effectiveness of the CTSA.

This recommendation is carried forward from the prior performance audit. Performance metrics and baseline data have been included in the RCTA Short-Range Transit Plan (SRTP), Fiscal Years 2019–20 to 2024–25 for existing general public transit services. Chapter 7 of the SRTP contains the CTSA Implementation Plan, which sets forth a plan for implementation of two new programs for RCTA to undertake as the CTSA for Del Norte County: Travel Training and ADA Eligibility Certification. However, the implementation plan does not include specific performance metrics for these two CTSA

programs to evaluate their cost effectiveness. As the CTSA, RCTA launched the two programs in January 2020 after consultations with the SSTAC and DNLTC. In August 2019, the RCTA Board approved the procurement of GetGoing software and hosting from Jigsaw Analytics Group to manage CTSA activities. The software contains a module that can generate reports and dashboards. Having this tool will enable the CTSA to develop metrics and monitor performance of the two programs that were recently launched. It is suggested that DNLTC work with RCTA in the development of program metrics based on industry best practices.

Action Steps and Timeframe: Performance metrics for CTSA activities will be developed at the new CTSA program initiation. They will be evaluated by the Social Services Transportation Advisory Counsel and submitted to Del Norte Local Transportation Commission for acceptance.

Audit Recommendation 3: Develop strategies and protocols for succession planning.

The current DNLTC executive director has served in the role since 2006. The executive director is a contract employee and manages all agency matters internally and externally and also serves as the Clerk of the Board, providing notification of meetings and preparing Commission agendas. Staff reports to the Commission are concise and straightforward and provide the Commissioners with discussion of the topics. Commissioners interviewed for this audit have expressed high confidence in the executive director's ability to administer the affairs of the Commission in competent and thorough manner. One commissioner had questions about succession planning should the executive director decide to retire. It was suggested that the issue of succession planning be addressed in the OWP. Moreover, the executive director and the Commission are encouraged to discuss strategies and protocols regarding administrative succession at a Board retreat or during a regularly scheduled meeting.

Action Steps and Timeframe: Staff will research trends in succession planning with other Regional Transportation Planning Agencies in the State and will present options for Del Norte Local Transportation Commission consideration for strategies and protocols.

PEDESTRIAN LIGHTING PRIMER

APRIL 2022

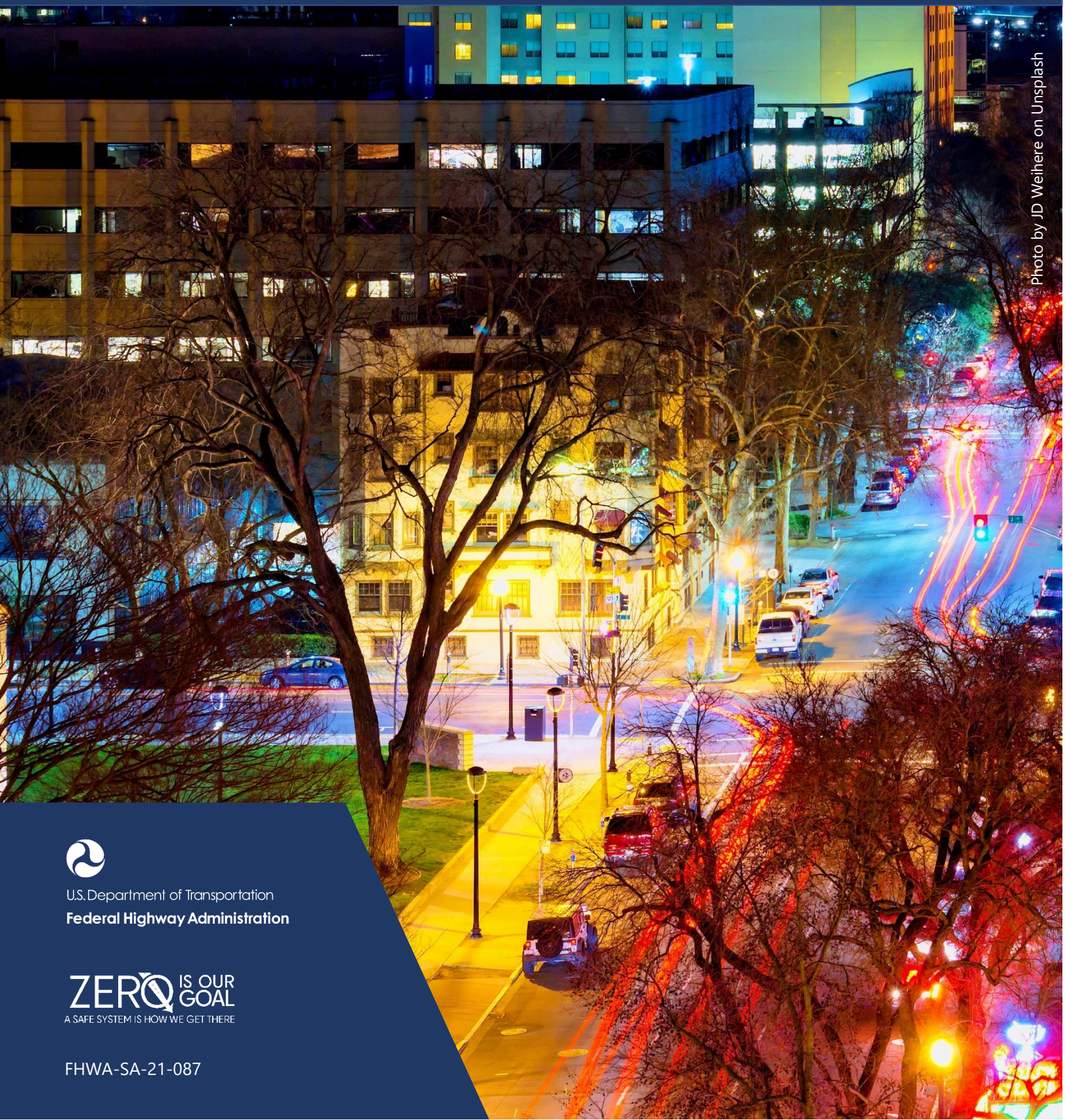


Photo by JD Weihere on Unsplash

U.S. Department of Transportation
Federal Highway Administration

ZERO IS OUR GOAL
A SAFE SYSTEM IS HOW WE GET THERE

FHWA-SA-21-087

Notice

This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The U.S. Government assumes no liability for the use of the information contained in this document.

The U.S. Government does not endorse products or manufacturers. Trademarks or manufacturers' names appear in this report only because they are considered essential to the objective of the document.

Non-Binding Content

The contents of this document do not have the force and effect of law and are not meant to bind the public in any way. This document is intended only to provide clarity to the public regarding existing requirements under the law or agency policies. While this is non-binding guidance, you must comply with the applicable statutes or regulations.

Quality Assurance Statement

The Federal Highway Administration (FHWA) provides high-quality information to serve Government, industry, and the public in a manner that promotes public understanding. Standards and policies are used to ensure and maximize the quality, objectivity, utility, and integrity of its information. FHWA periodically reviews quality issues and adjusts its programs and processes to ensure continuous quality improvement.

Technical Documentation Page

1. REPORT NO. FHWA-SA-21-087	2. GOVERNMENT ACCESSION NO.	3. RECIPIENT'S CATALOG NO.	
4. TITLE AND SUBTITLE Pedestrian Lighting Primer		5. REPORT DATE April 2022	
		6. PERFORMING ORGANIZATION CODE HSA	
7. AUTHOR(S) This primer is a compilation of joint efforts by Vanasse Hangen Brustlin, Inc. (VHB), Virginia Tech Transportation Institute (VTTI), and the FHWA Office of Safety to be a resource for transportation practitioners interested in lighting design considerations for locations with pedestrian activity.		8. PERFORMING ORGANIZATION REPORT NO. FHWA-SA-21-087	
9. PERFORMING ORGANIZATION NAME AND ADDRESS		10. WORK UNIT NO.	
		11. CONTRACT OR GRANT NO. DTFH61-05-D-00024 (VHB)	
12. SPONSORING AGENCY NAME AND ADDRESS Federal Highway Administration Office of Safety 1200 New Jersey Ave., SE Washington, DC 20590		13. TYPE OF REPORT AND PERIOD	
		14. SPONSORING AGENCY CODE FHWA	
15. SUPPLEMENTARY NOTES The FHWA contract manager for this report was Joseph Cheung.			
16. ABSTRACT Lighting of pedestrian facilities plays a key role in increasing the safety performance of the road network for all users. Effective pedestrian lighting installations are a means of addressing the vulnerability of pedestrians during dark conditions and improving safety and security of all road users spanning different ages and abilities, including wheelchair and other mobility device users. Lighting not only makes it easier for drivers to see pedestrians, but also improves pedestrians' abilities to see their surroundings and detect trip hazards. It increases pedestrians' perceived levels of safety and security associated with the use of pedestrian facilities. Lighting may also increase pedestrians' confidence in performing certain tasks, such as assessing and selecting appropriate gaps at uncontrolled crossings and monitoring vehicles approaching and making different movements through signalized intersections. The Federal Highway Administration (FHWA) published this primer to be a resource for transportation practitioners interested in the safety and security benefits of pedestrian lighting as well as lighting design considerations at locations with existing or future pedestrian activity.			
17. KEY WORDS: lighting, pedestrian, safety, security	18. DISTRIBUTION STATEMENT No restrictions.		
19. SECURITY CLASSIF. (OF THIS REPORT) Unclassified	20. SECURITY CLASSIF. (OF THIS PAGE) Unclassified	21. NO. OF PAGES 57	22. PRICE N/A

Form DOT F 1700.7 (8-72) Reproduction of completed pages authorized

Contents

List of Figures

List of Tables

1. Introduction

Lighting of pedestrian facilities plays a key role in increasing the safety performance of the road network for all users. Effective pedestrian lighting installations are a means of addressing the vulnerability of pedestrians during dark conditions and improving the safety and security of all road users spanning different ages and abilities, including wheelchair and other mobility device users. Lighting not only makes it easier for drivers to see pedestrians, but also improves pedestrians' abilities to see their surroundings and detect trip hazards. It increases pedestrians' perceived levels of safety and security associated with the use of pedestrian facilities. Lighting may also increase pedestrians' confidence in performing certain tasks, such as assessing and selecting appropriate gaps at uncontrolled crossings and monitoring vehicles approaching and making different movements through signalized intersections. The Federal Highway Administration (FHWA) research report Street Lighting for Pedestrian Safety *documents these benefits of lighting (Terry et al., 2020). FHWA published this primer to be a resource for transportation practitioners interested in the safety and security benefits of pedestrian lighting as well as lighting design considerations at locations with existing or future pedestrian activity.*

5

The primer has five sections:

Section 1 provides background information that illustrates the need and motivation of the primer, along with the primer purpose and scope.

Section 2 details the lighting design process, including assessments of potential lighting needs, design criteria, equipment selection, control strategy determination, and design and verification.

Section 3 presents a design example for a given set of conditions, including pedestrian volume, area type, and context.

Section 4 contains a discussion of the conclusions and findings of this document.

Section 5 is a list of the reports, journal articles, and other resources referenced herein.

1.1. Purpose and Scope of Primer

The purpose of this primer is to be a resource for transportation practitioners interested in lighting design considerations for locations with pedestrian activity. This primer is a user-friendly companion document to the FHWA research report *Street Lighting for Pedestrian Safety* (Terry et al., 2020). More specifically, the primer highlights how the results from the FHWA research report *Street Lighting for Pedestrian Safety* can complement commonly used lighting design guides such as those listed in Section 1.3. The primer also provides basic information that practitioners can consider when providing lighting to improve pedestrian safety. The primer is written in a manner that assumes the reader may have only basic knowledge of lighting terminology. However, it is important that a qualified lighting designer perform the actual steps of lighting design and finalize any design plans.

The objective of the research documented in the FHWA research report *Street Lighting for Pedestrian Safety* (Terry et al., 2020) was to provide lighting recommendations for pedestrian safety, including any specific needs for and examples of lighting associated with Safe Routes to School (SRTS) for children. In developing the lighting recommendations, the companion FHWA research report considered the ability of pedestrians to see and detect hazards on walkways and crosswalks, the visibility of pedestrians to motorists, and impacts of lighting on pedestrian decisions related to whether to cross a roadway.

1.2. Pedestrian Safety and Security

Pedestrian traffic fatalities in the U.S. have been steadily increasing over the past 10 years, both in frequency and as a proportion of total traffic fatalities. Figure 1 presents annual pedestrian fatality numbers from 2009 to 2019 and clearly displays this trend. During this same period, the estimated number of pedestrians injured in crashes fluctuated from year-to-year as shown by the bars in figure 2, but with the five-year rolling average trendline (the solid line in figure 2) showing a steady increase from approximately 64,000 in 2009 to approximately 75,000 in 2019.

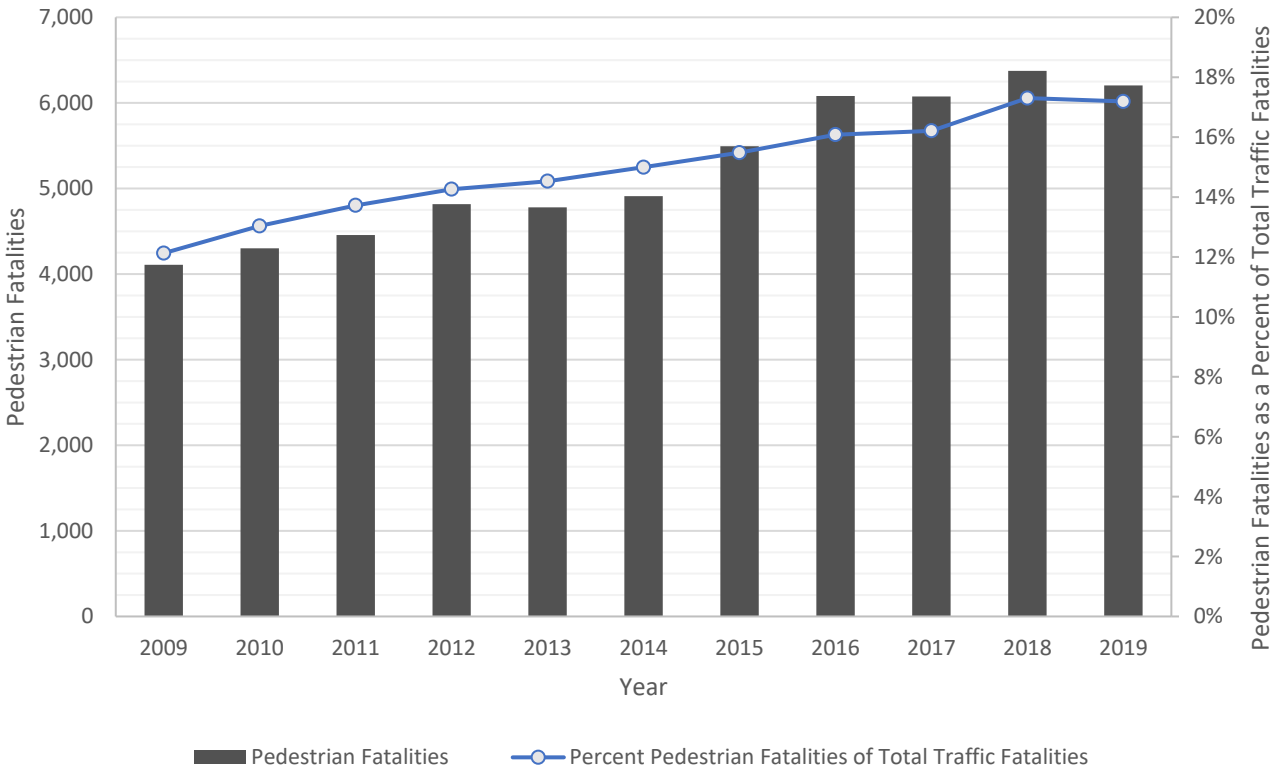


Figure 1. Graphic. Pedestrian fatalities per year and pedestrian fatalities per year as a percent of total traffic fatalities. Source: NHTSA.

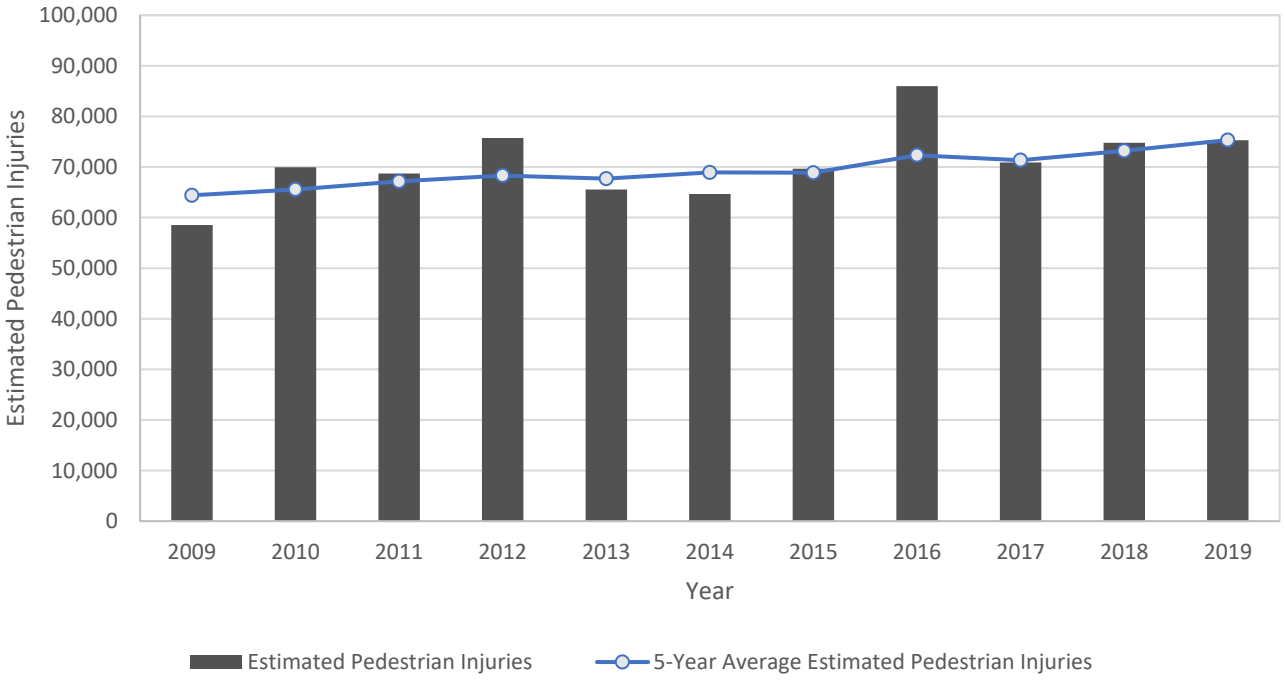


Figure 2. Graphic. Estimated pedestrian injuries per year and five-year average estimated pedestrian injuries per year. Source: NHTSA

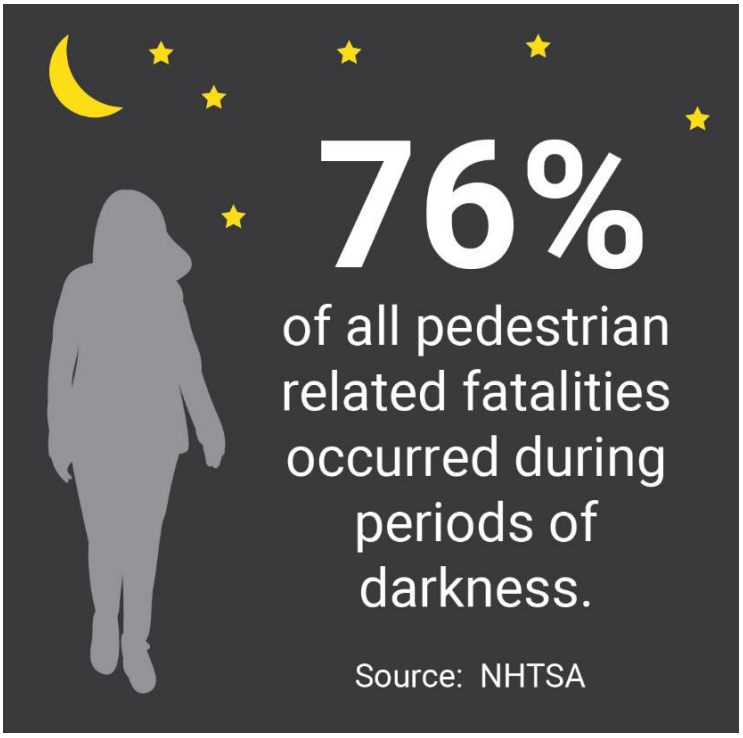


Figure 3. Graphic. Infographic for nighttime pedestrian fatalities. Source: FHWA.

The National Highway Traffic Safety Administration (NHTSA) reported that **76 percent of pedestrian fatalities in 2019 occurred in dark conditions** (including "Dark – Not Lighted," "Dark – Lighted," and "Dark – Unknown Lighting") as shown in figure 3 (NHTSA, 2021). This percentage increased from 69 percent of pedestrian fatalities occurring in dark conditions in 2009. Figure 4 **shows that minority communities experience a disproportionate burden of pedestrian fatalities in dark conditions. These statistics are compelling but become even more so when considering that only about 25 percent of all traffic volume occurs after dark** (Griffith, 1994; CIE, 2010). **This means that the majority of pedestrian traffic fatalities occur during the time of day when fewer vehicles are on the road**. Figure 5 shows that the frequency of pedestrian fatalities during dark conditions has experienced an increasing trend over the past 10 years.

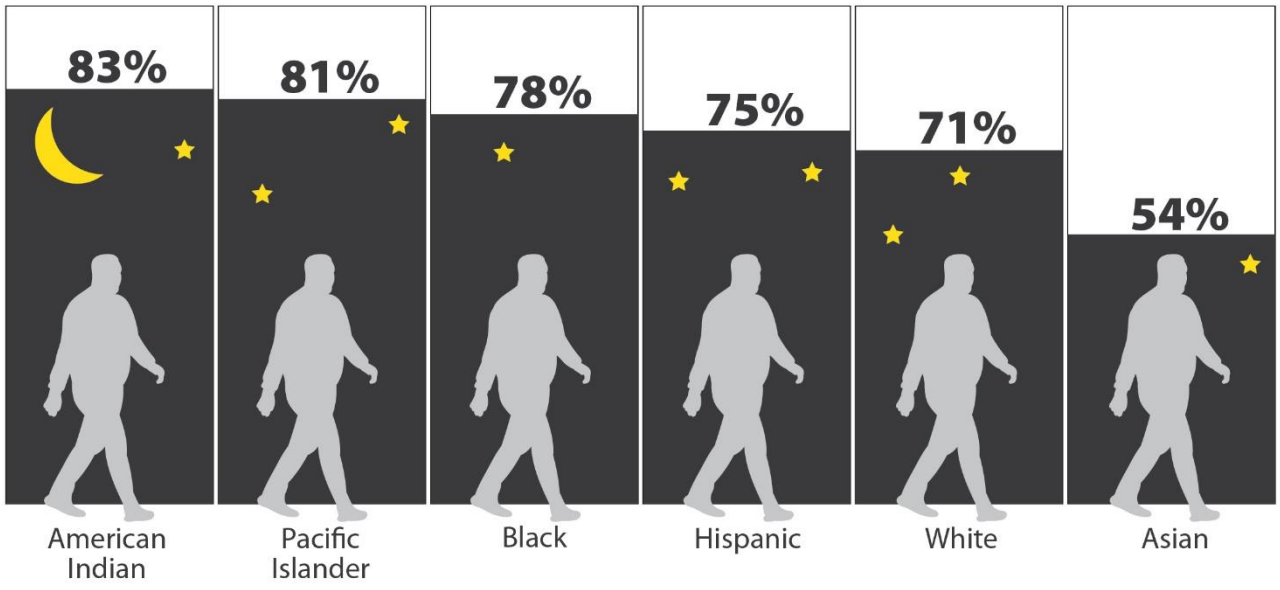


Figure 4. Graphic. Percentage of pedestrian fatalities in dark conditions (i.e., "Dark – Not Lighted," "Dark – Lighted," or "Dark – Unknown Lighting") by race (2008–2018). Source: NHTSA.

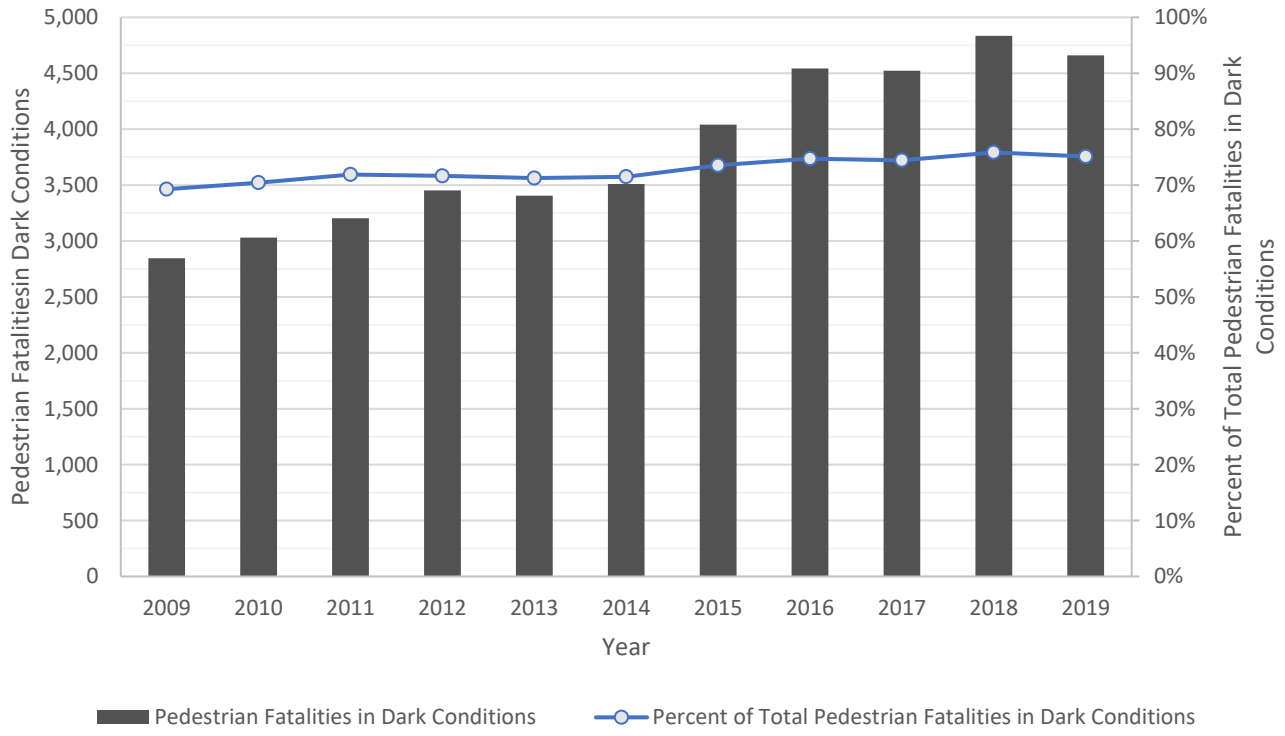


Figure 5. Graphic. Dark condition (i.e., "Dark – Not Lighted," "Dark – Lighted," or "Dark – Unknown Lighting") pedestrian fatalities per year and dark condition pedestrian fatalities per year as a percent of total pedestrian fatalities. Source: NHTSA.

Pedestrians are the most vulnerable road user population at night and are **between three and almost seven times more vulnerable in the dark than during daylight hours** (Sullivan & Flannigan, 1999). Given these statistics, **pedestrians have the potential to gain significant safety performance benefits from new or improved lighting.**

In addition to increasing traffic crash risk, dark conditions can also have negative effects on pedestrian security. People may avoid walking at night as a precaution against potential crime (Painter, 1996). Darkness is one of the primary factors that influences potential personal risk and heightened fear, as darkness reduces visibility and recognition and creates additional blind spots. Women, in particular, report experiencing fear, real or perceived, at night that significantly constrains their travel behavior. Studies have documented that women suffer disproportionately high rates of victimization, especially from gender violence and theft, at night (Smith, 2008). Good lighting plays a role in reducing women's fear of walking or accessing transit at night (Loukaitou-Sideris, 2010). Lighting for pedestrian security is particularly important at locations where the walking space is restricted, ambient light may be blocked, and pedestrian traffic is more separated from the surrounding context. New or improved lighting can increase security and encourage pedestrian activity at night, specifically at and near transit stops. This can improve the safety and security of transit riders while boarding, alighting from, or waiting for transit. The American Public Transportation Association (APTA) developed the document *Security Lighting for Transit Passenger Facilities* as a resource for these situations (APTA, 2009).

The **Crash Modification Factors (CMF) Clearinghouse** contains several CMFs that quantify **reductions in the number of vehicle/pedestrian crashes** due to the addition of lighting: CMF IDs 435, 436, 440, 441, and 2379.

1.3. Benefits of Lighting for Pedestrian Safety and Security

Several studies of the effects of lighting on road safety concluded that proper lighting has the potential to reduce the number of nighttime pedestrian fatalities and injuries (Elvik & Vaa, 2004; Ye et al., 2008). These studies have resulted in CMFs that quantify reductions in the number of vehicle/pedestrian crashes due to lighting ranging from 0.58 (42 percent reduction) to 0.19 (81 percent reduction), depending on the crash severity of interest. These include CMF IDs 435, 436, 440, 441, and 2379 in the CMF Clearinghouse.

Zhou & Hsu (2012) collected illuminance data over 3 years along a 32-mile U.S. 19 corridor in Florida. The corridor had the highest pedestrian crash frequency in the county. More than 82 percent of the pedestrian crashes along the corridor occurred on segments with some type of lighting already present. The researchers paired the illuminance data with nighttime pedestrian crash data and found that road segments with lower levels of lighting were associated with a higher frequency of nighttime pedestrian crashes than segments with higher light levels. Nearly half of all the crashes occurred on segments where the illuminance was less than 10 lumens per square meter (lux). This study's findings highlighted that pedestrian safety depends not only on lighting presence, but also on the quality of lighting that is provided.

One pedestrian population that may especially benefit from improved lighting is school-age children. These children may travel to or from school, often by walking or biking, during the early morning or evening hours. Even if school hours are limited to the daytime, there are often before or after school activities that may cause students to travel earlier or later. Depending on the time of year, these trips could occur during twilight or total darkness. Furthermore, children are particularly vulnerable to vehicular traffic. They are often smaller in stature, and thus more difficult for motorists to see. Children are also not as experienced at judging the direction of sounds, estimating the speed and distance of oncoming vehicles, or anticipating other road users' behavior. Jonah & Engel (1983) found that the likelihood of child pedestrians being injured more than doubles during dark conditions. The Safe Routes to School (SRTS) Online Guide identifies pedestrian-scale street lighting as an important measure for improving safety and security for children walking to school (Safe Routes to School, 2015). This is especially true at intersections and other crossings.

In addition to improving pedestrian safety, lighting can also improve the personal security of pedestrians. Several studies show that new or improved lighting increases pedestrians' perception of security. Peña-García, Hurtado, & Aguilar-Luzón (2015) surveyed 275 pedestrians in Granada, Spain and found that higher illuminance levels tend to increase perceptions of security. Several other studies have shown lighting to have a substantial effect on perception of security (Loewen, Steel, & Suedfeld, 1993; Nasar, Fisher, & Grannis, 1993; Nasar & Jones, 1997). In addition to the presence of lighting, the type, quality, and distribution of lighting also affect perceived security (Boyce et al., 2000; Haans & de Kort, 2012; Markvica, Richter, & Lenz, 2019; Portnov et al., 2020). Painter (1996) studied both the occurrence of crime and pedestrian fear of crime on three streets in the United Kingdom that were identified as being "poorly lit, fear inducing, and potentially hazardous." After lighting improvements were implemented, incidents of crime and disorder decreased significantly at two of the three sites (the third had low occurrence of crime in both the before and after cases). The results also suggested that the improved lighting had a positive affect outside the immediate study area, reducing crime on several adjacent unlit streets. It also led to a marked increase in perception of personal security, with over 90 percent of respondents reporting their fear of crime had decreased, and significant increases in pedestrian activity. Chalfin et al. conducted a randomized experiment to study the effectiveness of street lighting in reducing crime. The study took place in New York City using temporary lighting installations and found that the addition of street lighting reduced outdoor nighttime crime by 36 percent (Chalfin et al., 2019) Painter & Farrington (1997) performed a survey-based experiment in the United Kingdom that showed crime prevalence decreased by 23 percent after improved lighting was installed, compared to a decrease of 3 percent at the control location. Crime incidence (average number of victimizations per household) decreased by 41 percent, compared to no change at the control location.

1.4. Existing Guidance and Gaps

There are several documents that provide general information on lighting warrants and design criteria. These include:

- American Association of State Highway and Transportation Officials (AASHTO) *Roadway Lighting Design Guide*, 7th Edition (AASHTO, 2018).
- Transportation Association of Canada (TAC) *Guide for the Design of Roadway Lighting* (TAC, 2006).
- National Cooperative Highway Research Program (NCHRP) Report 152 *Warrants for Highway Lighting* (also known as the FHWA Method) (Walton & Rowan, 1974).
- Illuminating Engineering Society (IES) RP-8-18 *Recommended Practice for Design and Maintenance of Roadway and Parking Facility Lighting* (IES, 2018).
- FHWA *Informational Report on Lighting Design for Midblock Crosswalks* (Gibbons et al., 2008).

Subsequent sections of this primer will cover selected content from these non-binding reference documents in more detail, focusing on the material within each of them that applies to lighting for pedestrian safety. In general, a majority of existing lighting references emphasize motorist needs.

A companion FHWA research report to this primer, *Street Lighting for Pedestrian Safety*, identified several gaps in existing lighting resources (Terry et al., 2020). These include:

- Understanding the visibility of children by motorists in low-light conditions.
- Understanding differences in light level requirements that may exist between adult and child pedestrians to maintain visual performance.
- Identifying recommended light levels resulting in optimal visibility for both pedestrians and drivers based on:
    - Empirical research to support the specification of light levels for both pedestrians and drivers.
    - Research and information on recommended lighting for sidewalks, roadway segments without crosswalks, and separated pedestrian facilities (to supplement current recommendations for crosswalk lighting).
- Establishing a universal metric for designing pedestrian lighting (e.g., vertical illuminance, semi-cylindrical illuminance, etc.).
- Understanding the effects of different lighting sources and luminaire types on pedestrian visibility.

2. Lighting Design Process

Lighting system design should consider a variety of factors, including safety and comfort for all road users, impacts to the environment, and energy consumption. Lighting design generally involves the steps in figure 6, each of which are discussed in this section of the primer.

Figure 6. Graphic. The major steps in lighting design. Source: FHWA.

The flowchart in figure 7 illustrates how the general lighting design process flows through each of these steps and depicts how background information, policies, and design reference materials inform the process, beginning with lighting analysis and ultimately resulting in a completed design. The final, iterative steps of the process include selecting pole locations, with initial arrangements often being revised multiple times to meet primary and secondary design criteria. These steps as shown in figure 7 are recommended by IES and AASHTO but are not required under FHWA regulations. The flowchart is included to illustrate a typical lighting design process.

For each step of the lighting design process, the following sections provide: 1) an overview of selected terminology and general lighting design considerations with references to other documents for additional information and 2) specific lighting design considerations for pedestrians.

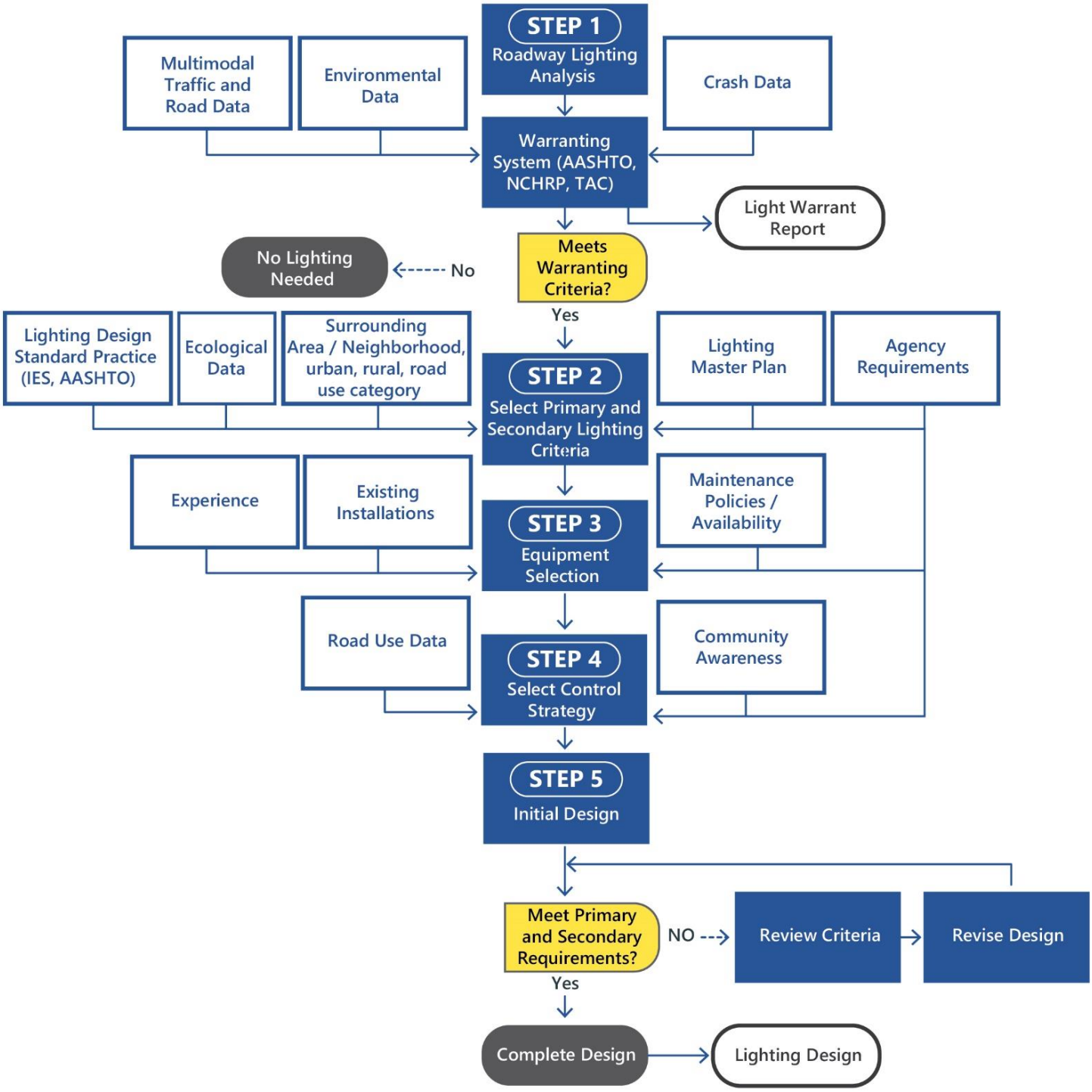


Figure 7. Graphic. Typical lighting design process flowchart (not required under FHWA regulations). Source: FHWA.

2.1. Assessment of Potential Lighting Needs

2.1.1. General Principles of Lighting Needs Assessment

A lighting warrant is a condition or set of conditions that are evaluated for a study area to inform the installation of lighting. Lighting warrants commonly include assessments of the amount of traffic (motorized and nonmotorized), roadway geometry, the surrounding environment, and crash statistics. Lighting practitioners in the United States generally reference three sources of lighting warrant procedures, though FHWA regulations do not require the use of these sources or the procedures they contain:

- AASHTO *Roadway Lighting Design Guide, 7th Edition* (AASHTO, 2018).
- TAC *Guide for the Design of Roadway Lighting* (TAC, 2006).
- NCHRP Report 152 *Warrants for Highway Lighting* (Walton & Rowan, 1974).

Each resource provides a framework for evaluating different warrant criteria and considering the benefits and cost effectiveness of installing lighting. The resources focus primarily on the installation of lighting to improve the general visibility and conditions for motorists. Resources for warranting lighting installations for pedestrians are more limited.

2.1.2. Pedestrian Considerations for Lighting Needs Assessment

The practice of evaluating the need for pedestrian lighting varies widely among different regions, State Departments of Transportation (DOTs), and local agencies, and decisions are often made on a case-by-case basis. The information provided in this primer represents a sample of factors that can be part of a needs assessment for pedestrian lighting. It is based on a recent literature review and targeted scan tour conducted by the FHWA Safe Transportation for Every Pedestrian (STEP) program.

As part of its STEP program, FHWA collaborated with State and local stakeholders to increase implementation of countermeasures that reduce pedestrian fatalities, particularly at uncontrolled crossing locations. In February 2021, participants from the FHWA STEP team and six State DOTs gathered virtually for an FHWA STEP Pedestrian Lighting Scan Tour to discuss approaches to site selection and prioritization for potential lighting improvements.

A key outcome of this scan tour involved FHWA documenting noteworthy State agency practices related to lighting for pedestrian safety. The factors most often used by the State DOTs in attendance to determine warranting conditions for pedestrian lighting include pedestrian crash history, especially during hours of darkness, pedestrian volumes, and the perceived level of risk and vulnerability of pedestrians (see table 1).

FHWA grouped the factors based on their prevalence in the reviewed literature and sampled agency policies and practices. While the factor groupings in table 1 are in part listed based on input from the participating States for the Scan Tour and are not always research based, lighting designers can consider how to incorporate these factors into their own local and regional noteworthy practices and to inform their decision-making process.

State and local agencies responsible for lighting decisions, or other governing bodies (e.g., city

councils) may grant exemptions from providing pedestrian lighting when warranting criteria are met due to historical or environmental reasons. In locations without pedestrian lighting, other measures to enhance user visibility of roadway edges, pedestrian crossings, and the roadside can guide drivers and pedestrians navigating darker sections of roadway and increase driver awareness of pedestrian presence. Examples include high visibility markings, parking restrictions, and signing (FHWA, 2017; FHWA, 2018).

Additionally, agencies can equitably engage with underserved communities to determine where and how new and improved lighting can most benefit the community by considering their priorities, including eliminating crash disparities, connecting to essential neighborhood services, improving active transportation routes, and promoting personal safety. In 2019, Portland Bureau of Transportation (PBOT) conducted a citywide "Walking Priorities Survey" to understand the barriers Portlanders face while walking. When evaluating the demographics of survey respondents, it became clear that Black Portlanders were underrepresented. So, PBOT created a "Walking While Black" focus group to better understand if Black Portlanders experience unique barriers or identify unique priorities to improve walking (PBOT, 2019). As shown in figure 8, the focus group revealed that Black Portlanders identified poor street lighting as the biggest barrier to walking, compared to the citywide population which rated it much lower. As a result, Portland introduced new lighting-level guidelines to increase lighting on public streets.

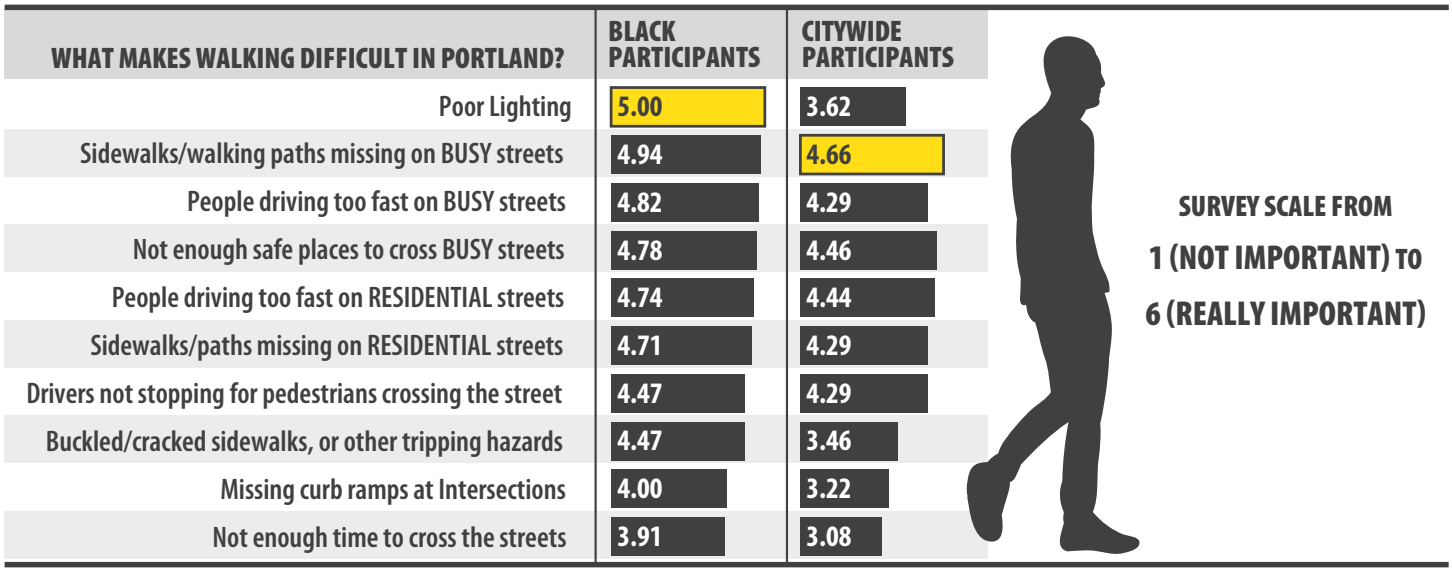


Figure 8. Focus group results for places that are most important to improve for walking in Portland. Source: PBOT.

Table 1. Factors identified by a STEP Pedestrian Lighting Scan Tour for assessing pedestrian lighting needs. Source: FHWA.

Group 1 Most common Factors	Group 2 Less Common Factors	Group 3 Other Factors
Average daily traffic (ADT) volumes	Available sight distance	Ambient lighting levels
Functional classification	Benefit-cost analysis	Frequency of inclement weather
Nearby development, land use, or density	Channelization devices (curb, guardrail, etc.)	Presence of parking
Night-to-day crash ratio*	Intersection layout complexity	Retroreflective pavement markings (reduced need for lighting)
Night or pedestrian crash history	Presence of multiple turn lanes	Anticipated crossing locations for children (e.g., schools , parks, recreation centers)
Ped/bike presence and crossing maneuvers (any – with or without marked crossings)	Speed limit (often 35+ or 45+ mph)	Speeding history (10+ mph over posted)
Ped/bike volume during hours of darkness (often 100+/hr)	Vertical and horizontal curvature	Turning movement volumes
-	-	Wide or depressed medians

Note: * Night-to-day crash ratio = number of crashes at night / number of crashes during day.

- = not applicable.

2.2. Selection of Design Criteria

Once a need for lighting in the study area is established, design criteria are then identified. The selected criteria for general roadway lighting applications typically make up two categories: primary criteria and secondary criteria.

- Primary criteria are the desired lighting levels in the project area that the lighting system is designed to provide. Lighting levels are often defined using measures of luminance or illuminance.
- Secondary criteria guide the characteristics of a lighting system, including aesthetics, comfort of the light source, and the ability to limit excess light output.

In addition to these factors, there are additional design criteria to consider for pedestrian lighting applications, discussed in section 2.2.3.

2.2.1. Primary Design Criteria

Design criteria and recommended practices are guided by basic measures of lighting levels such as average and average-to-minimum ratios. IES *RP-8-18,* a recommended practice for the design and maintenance of roadway lighting, identifies criteria for average luminance and uniformity ratios for various road classifications (IES, 2018). The AASHTO *Roadway Lighting Design Guide* provides recommended lighting levels using illuminance criteria rather than luminance (AASHTO, 2018). FHWA regulations do not require the use of these sources or the procedures they contain. The next two sections provide additional background on illuminance and luminance.

Illuminance

Illuminance is a measure of how much light is falling on a surface per unit area. Illuminance is measured in International System (SI) units of lux (lx) or non-SI units of foot-candles (fc) common to the US, where one foot-candle is equal to 10.764 lux. There are three methods of measuring illuminance when considering lighting designs: horizontal, vertical, and semi-cylindrical.

Horizontal illuminance is measured on a road surface in a horizontal orientation (see figure 9), defining the amount of light falling on a horizontal plane. Increasing horizontal illuminance at night with lighting improves the accuracy and speed at which information can be ascertained by the user from the roadway environment (Boyce, 1973; Eloholma et al., 2006; Rea, 2000; Terry et al., 2016). Previous studies have indicated that nighttime crashes at intersections can be mitigated by an increase in the horizontal illuminance level (Bhagavathula et al., 2015; Minoshima et al., 2006; Oya, Ando, & Kanoshima, 2002).

Vertical illuminance defines the amount of lighting falling on a vertical plane (see figure 9). For lighting design, measurements of vertical illuminance are typically recorded at the eye level of observers oriented to their path of travel—whether drivers or pedestrians. Vertical illuminance helps road users see objects, but also influences the amount of glare experienced by those users. The vertical-to-horizontal illuminance ratio is a measure of potential glare, with higher ratios representing more glare. Generally, a vertical illuminance measurement height of 1.5 m from the ground represents the eye height of a standing pedestrian.

Semi-cylindrical illuminance is a measure that considers the light falling on a semi-cylinder rather than on a flat surface by measuring the light falling on a surface from a wider angle than a vertical illuminance measurement (see figure 9). This metric

may more accurately represent the ability of a driver to see a pedestrian in some scenarios since it helps account for the three-dimensional nature of pedestrians. It may also be an effective metric for pedestrian lighting requirements when considering pedestrian-to-pedestrian interactions on a pedestrian facility given that facial recognition can be important for a pedestrian's perception of safety.

Luminance

Luminance is the amount of light emitted from a surface in a specific direction per unit area of the surface. Luminance is measured in either SI units of candela per square meter (cd/m^2) or non-SI units of footlambert (fL), where one fL is equal to 3.426 cd/m^2. In terms of visual perception, an observer perceives luminance. It is an approximate description of how "bright" an object appears when viewed from a given direction. Research has shown that increasing the luminance of the roadway surface makes objects on the roadway easier to detect (Economopoulos, 1978). At night, drivers can detect objects sooner as the average luminance of the roadway increases (Cuvalci & Ertas, 2000; Gibbons et al., 2015; He et al., 1997; Lewis, 1999). A luminance measure describes perceived brightness of an object when viewed from a given direction.

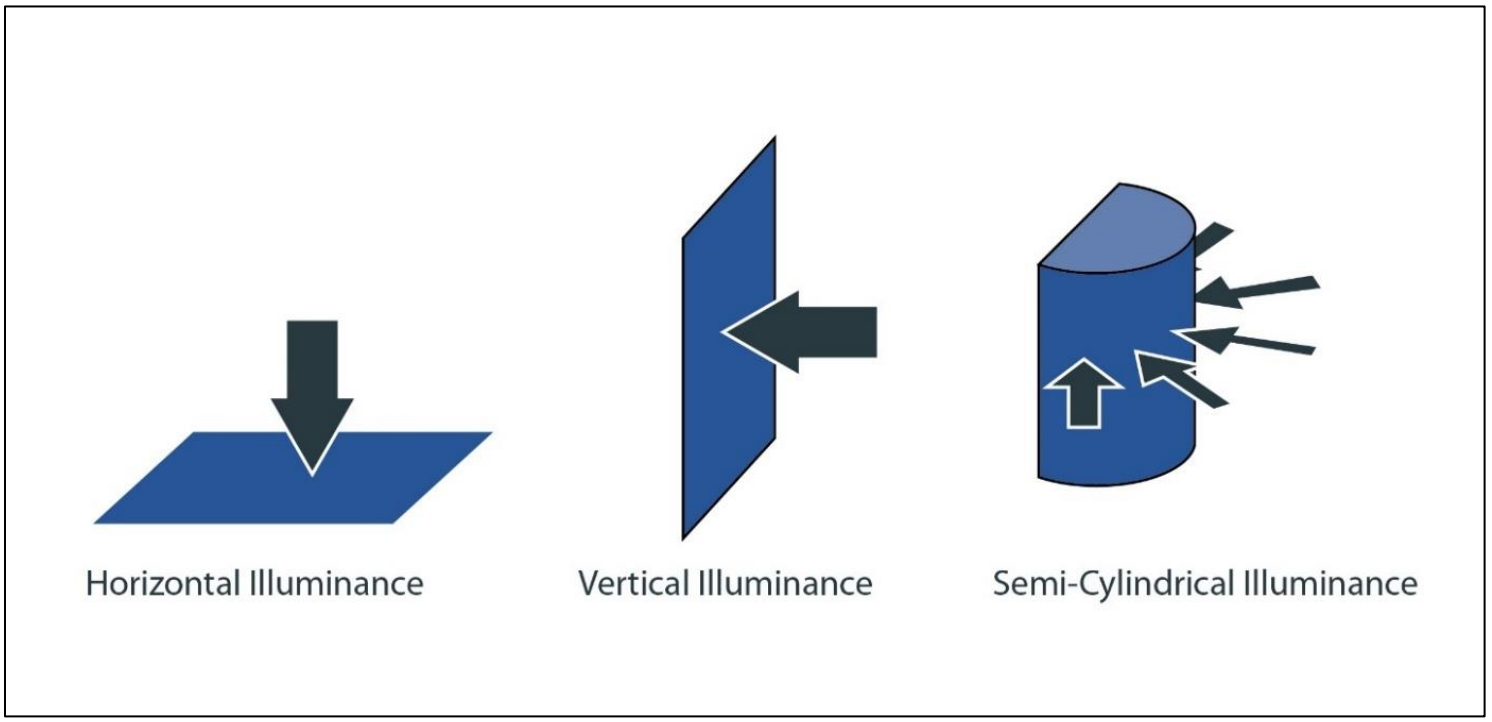
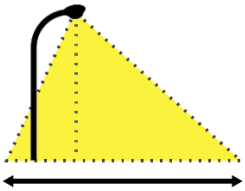


Figure 9. Graphic. Methods of calculating illuminance. Source: FHWA.

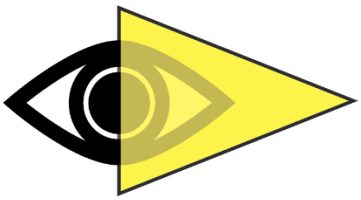
2.2.2. Secondary Design Criteria

Secondary design criteria are selected to guide characteristics, selection, and placement of the light sources. Local agencies or municipalities often provide policies or master plans that influence the selection of secondary design criteria using the following metrics.

Correlated color temperature (CCT) of the light source - A measure of the apparent color output of a light source, measured in degrees Kelvin (K) (IES, 2018). Luminaires manufactured for use in roadway and pedestrian applications are tested for color temperature. CCT represents the relative warmth of the emitted light. Lower values (e.g., 2700K) indicate a warm, yellow tone of light; higher values (e.g., 5000K or more) indicate a cool, blue tone of light; a neutral white is around 4000K.



Surround ratio – A ratio of the illuminance spilling over the edge of a path or roadway relative to the illuminance on the path or roadway (CIE, 2000). A surround ratio is calculated by comparing the average illuminance in the area adjacent to a roadway equal in width to one travel lane, to the average illuminance in the roadway. Recent research has shown that a surround ratio of at least 80 percent provides significant benefits for the detection of objects and pedestrians both in and beside the roadway.



Glare – Difficulty or discomfort associated with a light source in direct view of the observer (IES, 2018). Veiling luminance is a common measure of glare used to guide the lighting design process. There are two types of glare that may occur due to the presence of a light source.

- Disability glare is intensity from a light source that limits a road user's ability to see.
- Discomfort glare occurs when light from a light source causes discomfort to a road user.

It is important for both types of glare to be minimized. IES RP-8-18 provides recommended maximum allowable levels for glare (IES, 2018). Glare can become more of a potential issue for pedestrian scale lighting (6.5m in height or lower). Figure 10 shows an example of glare from a light source. Section 2.2.3 of this primer recommends an approach to mitigating glare from lower mounting heights by increasing the vertical illuminance and luminance.

Figure 10. Photograph. Example of glare from a light source. Source: FHWA.

Light trespass – Excess light that falls on areas or surfaces that are not intended to be illuminated, such as private properties, residential areas, or the night sky (IES, 2018). A common method of quantifying light trespass is by calculating the vertical illuminance on a vertical plane at the public ROW. Light trespass is minimized with careful selection, placement, and orientation of luminaires so that light is directed toward the area intended to be illuminated. Alternatively, shielding of a light source may be an effective means of blocking unwanted light output from a luminaire. Figure 11 presents an illustration of light trespass from a luminaire.

Recommended limitations on light trespass often become more stringent in areas of environmental sensitivity. IES RP-8-18 provides recommended maximum allowable levels for light trespass based on environmental zone ratings (IES, 2018). Environmental zones are determined by surrounding land use and development.

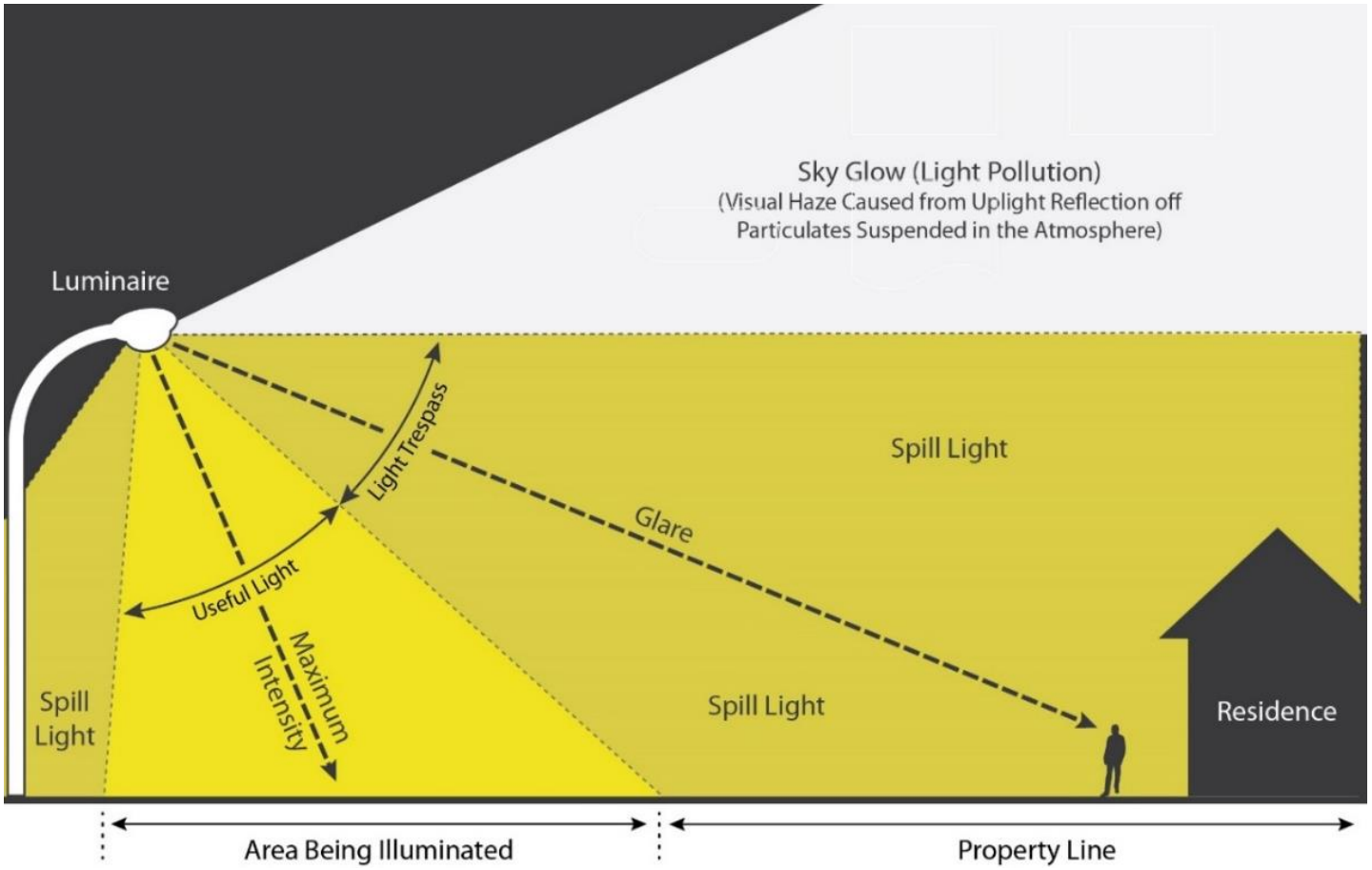


Figure 11. Graphic. Light trespass, glare, and sky glow. Source: FHWA.

2.2.3. Pedestrian Considerations for Design Criteria

This section of the primer outlines the general steps for determining lighting design criteria for pedestrian facilities. The steps bring together information from two FHWA research and informational reports on pedestrian lighting, *Street Lighting for Pedestrian Safety* and FHWA's *Informational Report on Lighting Design for Midblock Crosswalks*, as well as other commonly referenced lighting resources, such as IES RP-8-18 (Terry et al., 2020; Gibbons et al., 2008; IES, 2018).

Determine the type of pedestrian facility and level of pedestrian activity

This primer generally classifies pedestrian facilities into one of three categories based on the research from which the primer is based. The bullet list below describes these categories and the respective basis for lighting design criteria in this primer within those categories.

- **Pedestrian Facility Type – Marked Crosswalks (midblock and intersections).** Marked crosswalks indicate locations for pedestrians to cross a roadway and signify to motorists to yield to them (FHWA, 2013a). Design criteria for lighting of a crosswalk is provided in FHWA's *Informational Report on Lighting Design for Midblock Crosswalks* (Gibbons et al., 2008). While the underlying research was focused on midblock crosswalks, the conclusion of the informational report translates the findings to potential criteria for crosswalks at intersections.
- **Pedestrian facilities adjacent to the roadway.** A category of pedestrian facilities adjacent to (but not crossing) a roadway captures sidewalks and walkways (i.e., "pedestrian lanes") that provide people with space to travel within the public ROW that is separated from roadway vehicles. These facilities also serve as places for children to walk, run, skate, ride bikes, and play (FHWA, 2013b). Design criteria for lighting of these facilities is provided in the FHWA research report *Street Lighting for Pedestrian Safety* and are a function of pedestrian activity levels as defined in IES RP-8-18 (Terry et al., 2020; IES, 2018). The research documented in the FHWA report *Street Lighting for Pedestrian Safety* focused on the abilities of drivers to detect children on pedestrian facilities positioned approximately 5 to 7 ft (1.5 to 2 m) to the right of the driving lane. This distance coincides with the positioning of a sidewalk. The behaviors and decision making of children are not always predictable and the safety of a child in proximity to a roadway increases when the driver is aware of the child. This highlights the need to provide adequate pedestrian lighting at this distance from the roadway. The research in the FHWA report *Street Lighting for Pedestrian Safety* also studied the ability of pedestrians to identify potential trip-and-fall hazards in their path on these adjacent facilities.
- **Separated pedestrian pathway.** Lighting for pedestrian areas that do not cross and are not adjacent to or within a roadway is designed to meet a different set of objectives and criteria, as no vehicle-to-pedestrian interaction is anticipated. Recommended design criteria for these facilities are not the focus of this primer and are anticipated in other, upcoming informational resources.

Pedestrian lighting design criteria in the previously cited resource documents sometimes vary as a function of a general categorization of pedestrian activity. The following definitions are adapted from IES RP-8-18 and are referenced throughout this

document, though they are not legally binding under FHWA regulations:

- **Low (10 or fewer pedestrians per hour)** – Areas with very low volumes of pedestrians during hours of darkness. Examples may include suburban streets with single family dwellings, very low-density residential developments, and rural or semi-rural areas.
- **Medium (11-100 pedestrians per hour)** – Areas where lesser numbers of pedestrians are expected during hours of darkness. Examples may include downtown office areas, libraries, apartments, neighborhood shopping, industrial, parks, and streets with nearby transit lines.
- **High (over 100 pedestrians per hour)** – Areas with significant numbers of pedestrians expected during hours of darkness. Examples may include downtown retail areas, theaters, concert halls, stadiums, and transit terminals.

Determine illuminance criteria

Illuminance criteria provided in different resource documents vary by the type of pedestrian facility and by the level of pedestrian activity.

Marked Crosswalks: Midblock - For crosswalk locations, FHWA's *Informational Report on Lighting Design for Midblock Crosswalks* found that an average vertical illuminance of 20 lux in the crosswalk, measured at a height of 1.5 m (5 ft) from the road surface, provided adequate detection distances in most circumstances (Gibbons et al., 2008).

Intersections - The FHWA's *Informational Report on Lighting Design for Midblock Crosswalks* stated that while no specific research has been performed that addresses the higher background luminance typically found at intersections and the greater cognitive demands on drivers as they approach an intersection, the informational report considered a level of 30 vertical lux a conservative estimate of the lighting level required for adequate visibility (Gibbons, et al., 2008).

Adjacent pedestrian facilities - For pedestrian facilities adjacent to (but not crossing) a roadway (e.g., sidewalks and walkways), the FHWA research report *Street Lighting for Pedestrian Safety* suggests the use of illuminance criteria measured in semi-cylindrical (SC) lux where pedestrian activity is high (more than 100 pph) (Terry et al., 2020). The report recommends 10 SC lux at these locations, and notes that additional light beyond this level does not increase visibility. The same report recommends 2 vertical lux for these facilities where pedestrian activity is low (0 to 10 pph) to medium (11 to 100 pph).

Determine pavement luminance based on area type and pedestrian volume

IES RP-8-18 provides criteria for roadway luminance based on both the classification of the roadway and the identified level of pedestrian activity (IES, 2018). Table 2 provides a summary of the IES RP-8-18 criteria. The criteria are not required under FHWA regulations.

Table 2. Recommended roadway luminance criteria by street classification and pedestrian activity (from IES RP-8-18, not required under FHWA regulations).

Street Classification	Pedestrian Activity Classification	Average Luminance L_{avg} (cd/m^2)	Average Uniformity Ratio L_{avg}/L_{min}	Maximum Uniformity Ratio L_{max}/L_{min}	Maximum Veiling Luminance Ratio $L_{v,max}/L_{avg}$
Major	High	1.2	3.0	5.0	0.3
	Medium	0.9	3.0	5.0	0.3
	Low	0.6	3.5	6.0	0.3
Collector	High	0.8	3.0	5.0	0.4
	Medium	0.6	3.5	6.0	0.4
	Low	0.4	4.0	8.0	0.4
Local	High	0.6	6.0	10.0	0.4
	Medium	0.5	6.0	10.0	0.4
	Low	0.3	6.0	10.0	0.4

L_{avg}: Maintained average pavement luminance
L_{min}: Minimum pavement luminance
$L_{v,max}$: Maximum veiling luminance

The research documented in the FHWA research report *Street Lighting for Pedestrian Safety* suggests maintaining a minimum average luminance on adjacent pedestrian facilities for visibility of pedestrians to drivers and for pedestrians' visibility of their walking path (Terry et al., 2020). The minimum average luminance level depends on the area type classification within the previously determined level of pedestrian activity. The following bullet list highlights these suggested luminance criteria:

- For high pedestrian volume facilities and school zones:
  - Urban environments – 2 cd/m2 average
  - Rural environments – 1 cd/ m2 average

- For low to medium pedestrian volume facilities:
  - Urban environments – 1 cd/m2 average
  - Rural environments – use typical road luminance recommended in RP-8-18, shown in table 2.

Lighting designers can also use typical road luminance values recommended in IES RP-8-18 along crosswalks (IES, 2018).

The average luminance provided by a design along an adjacent pedestrian facility is determined along a grid of calculation and measurement points aligned along the pedestrian path. This line of calculation points along the path should be spaced at no more than 2 m (6.6 ft).

Select Light Source CCT: Special Considerations

CCT is a measure of the apparent color output of a light source, measured in degrees Kelvin (K). CCT considerations can be applied to any type of light source, but typically becomes important with LED light sources, as the technology of LED lighting allows for a wide range of available CCT options, whereas other types of light sources do not allow the same flexibility.

In the FHWA research report *Street Lighting for Pedestrian Safety*, researchers evaluated CCT selection on the visual performance of drivers in detecting pedestrians. The researchers compared pedestrian detection distances under three LED light sources ranging from 2200 to 5000 K. Results determined the detection distances under the 2200 K LEDs were significantly shorter than the 4000 K and 5000 K LEDs under the same luminance levels as shown in figure 12 (Terry et al., 2020).

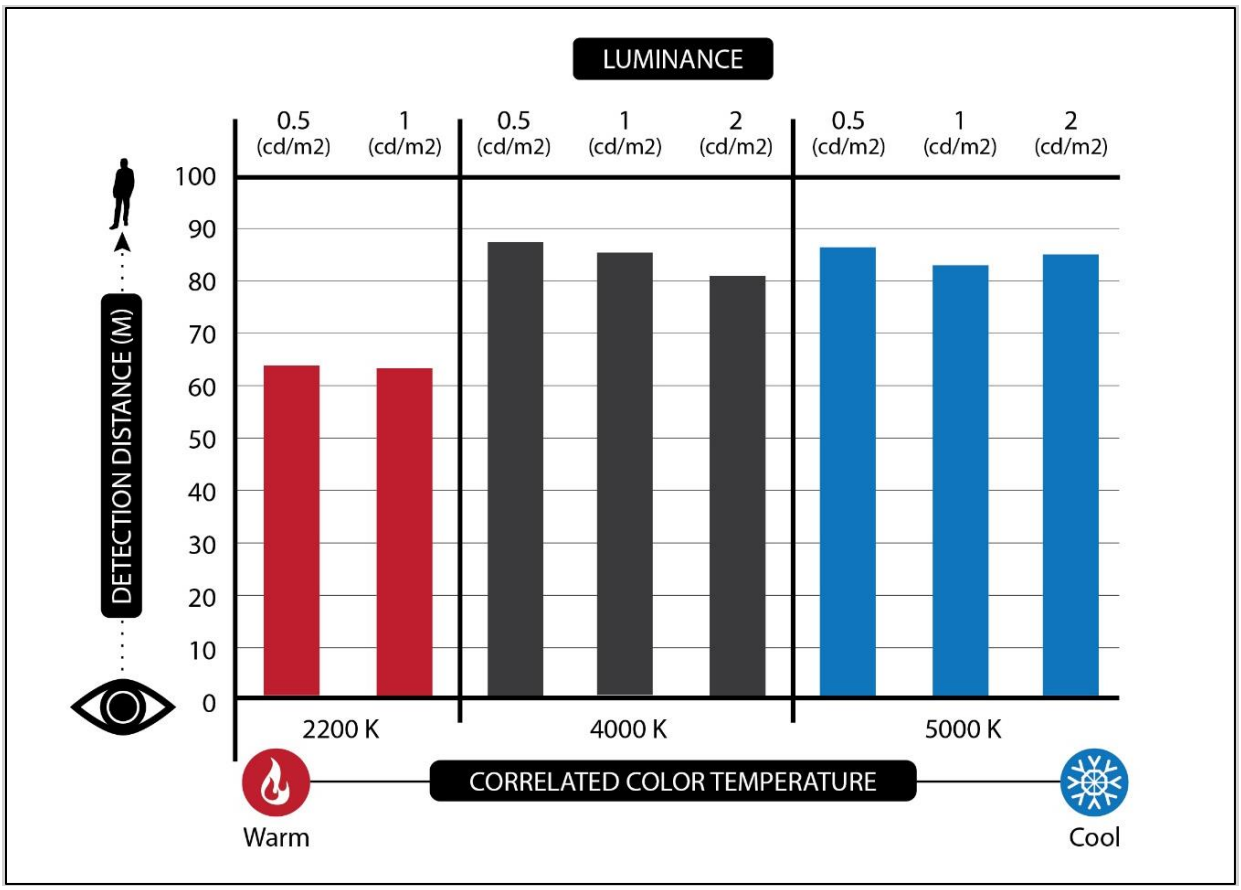


Figure 12. Graphic. Detection distance for rural highway by light type and luminance. Source: FHWA.

Since the development and popularization of LED roadway lighting, research has suggested that the light spectrum used in LED roadway lighting, particularly of higher Kelvin ratings, can disrupt melatonin production, resulting in poorer sleep quality and the overall health of those near the roadway. When selecting the spectral content of a light source, a range of 3000 K to 4000 K obtains a balance between the potential negative impacts on health and the potential benefits to road user visibility. Achieving such a balance remains an active topic of discussion in public health and lighting professions. The American Medical Association Council on Science and Public Health, for example, encourages the use of 3000K or lower to minimize potential negative health and environmental effects (AMA, 2016). State and local agencies, or other governing bodies responsible for lighting decisions, may decide to consider lower CCT values in environmentally sensitive areas or areas where the lighting system is near a residential area. Clear communication and documentation of such considerations will provide a record of stakeholder discussions and trade-off analysis that led to an informed decision.

Summary of Lighting Design Criteria for Pedestrian Facilities

The information in table 3 presents design criteria for pedestrian facilities based on the steps in the previous sections of this document. Values presented are for areas where the pedestrian lighting is provided by a roadway scale luminaire (6.5m or 20 ft or higher). For pedestrian scale lighting (6.5m in height or lower) an additional 2 vertical lux and 0.5 cd/m2 are added to the criteria to overcome additional glare resulting from the use of a lower mounting height. Figure 13 presents a flowchart of this design criteria selection process, depicting the roadway factors and road user characteristics that influence the design. These steps as shown in figure 13 are recommended by IES and AASHTO but are not required under FHWA regulations. The flowchart is included to illustrate a typical criteria selection process.

Table 3. Recommended design criteria for pedestrian facilities (not required under FHWA regulations)[1].

Pedestrian facility characteristics		Light Source Characteristics			
		Average Illuminance	Average Luminance		CCT (LED only)
			Rural	Urban	
Intersection crosswalk		30 lux vertical	*	*	3000 K to 4000 K
Midblock crosswalk		20 lux vertical	*	*	3000 K to 4000 K
Facility adjacent to roadway	Low[2] to Medium[3] Pedestrian Activity	2 lux vertical	*	1 cd/m^2	3000 K to 4000 K
	High[4] Pedestrian Activity and/or School Zones	10 lux SC	1 cd/m^2	2 cd/m^2	3000 K to 4000 K

*Use minimum maintained average pavement luminance criteria from RP-8-18.

1 Values are for roadway scale luminaire heights (6.5m or 20 ft or higher). For pedestrian scale lighting (6.5m in height or lower), add 2 vertical lux and 0.5 cd/m2 to the criteria to overcome increased glare resulting from the use of a lower mounting height.

2 Low Pedestrian Activity (10 or fewer pedestrians per hour) – Areas with very low volumes of pedestrians during hours of darkness. Examples may include suburban streets with single family dwellings, very low-density residential developments, and rural or semi-rural areas.

3 Medium Pedestrian Activity (11-100 pedestrians per hour) – Areas where lesser numbers of pedestrians are expected during hours of darkness. Examples may include downtown office areas, libraries, apartments, neighborhood shopping, industrial, parks, and streets with nearby transit lines.

4 High Pedestrian Activity (over 100 pedestrians per hour) – Areas with significant numbers of pedestrians expected during hours of darkness. Examples may include downtown retail areas, theaters, concert halls, stadiums, and transit terminals.

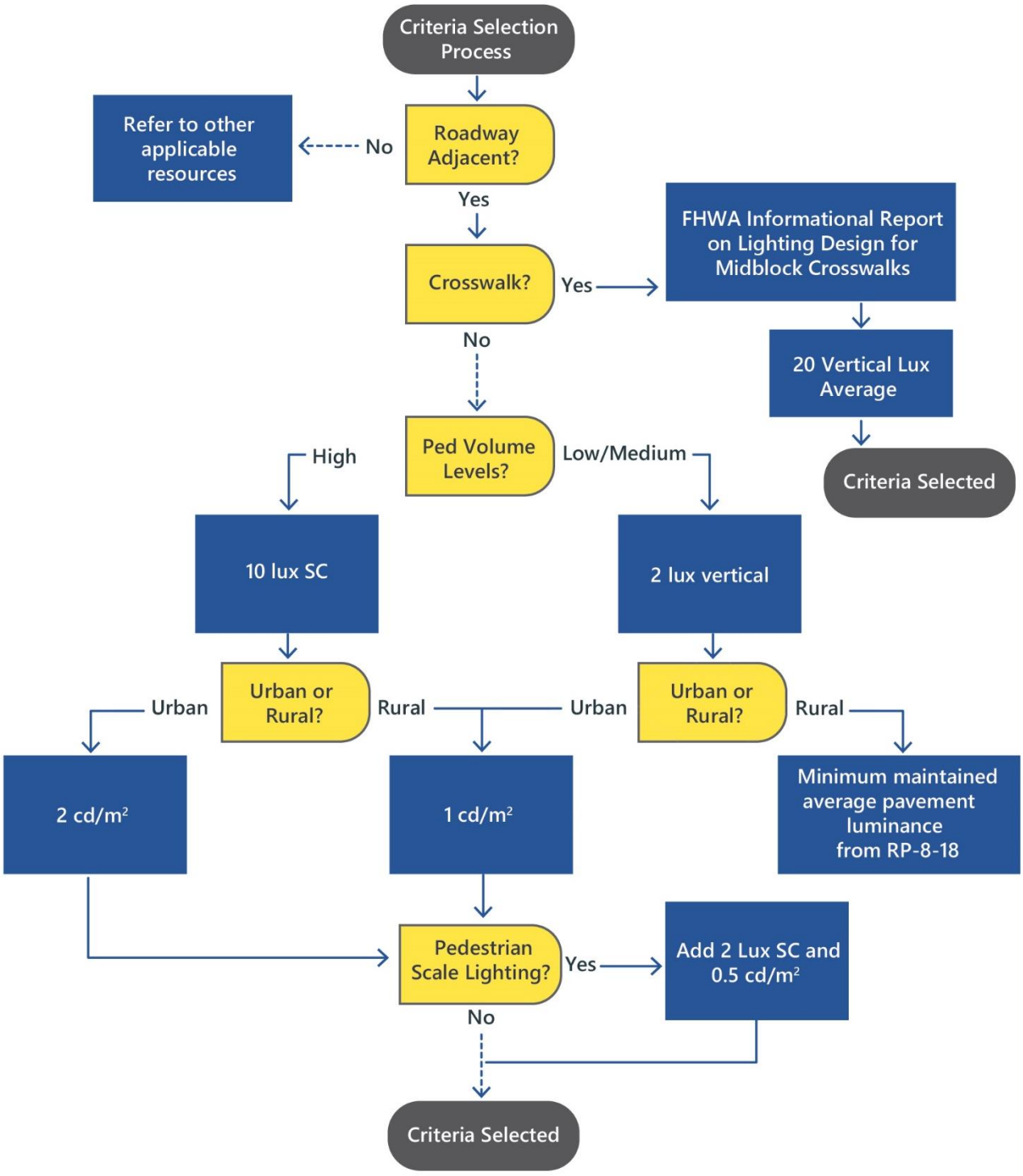
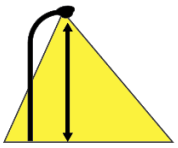


Figure 13. Graphic. Recommended pedestrian lighting criteria selection flowchart (not required under FHWA regulations). Source: FHWA.

2.3. Equipment Selection

2.3.1. General Principles of Equipment Selection

After the design criteria for a project location have been selected, lighting equipment is selected for the design. Luminaires are often selected based on an inventory of existing lighting installations or preferences and policies of the local agency. When feasible, equipment is selected to minimize the total light output while meeting the goals of the project and the design criteria. Some of the elements that are considered when selecting lighting equipment and luminaires include:



Luminaire mounting height – The distance from ground level to the light source.

Luminaire wattage – The power used by a luminaire to produce light. Luminaires with higher wattage levels typically produce more light.

IES light distribution – A classification system that describes the lateral and longitudinal pattern of light that is produced by a luminaire. Distribution types range from Type I (very linear output) to Type V (circular output). Definitions and classification of light distribution types is included in IES RP-8-18 (IES, 2018), though the definitions and classification are not required under FHWA regulations. General representations of IES distribution types are presented in figure 14.

BUG Rating – A rating system that indicates the amount of backlight (B), uplight (U), and glare (G) that is produced by a luminaire, with each value rated on a scale from 0 to 5. Higher BUG ratings may indicate that light is being directed away from the target facility or into the night sky. BUG ratings are described in ANSI/IES TM-15-20, *Luminaire Classification System for Outdoor Luminaires* (ANSI/IES, 2020). FHWA regulations do not include requirements based on BUG ratings.

Correlated color temperature (CCT) (refer to Section 2.2.)

Aesthetics – Luminaires are often selected for decorative design characteristics.

Many properties of the selected equipment are interrelated. For example, a particular mounting height will influence the selection of luminaire wattage to appropriately meet design criteria. Designers consider these properties and how they

affect one another when selecting or recommending lighting equipment for a given project.

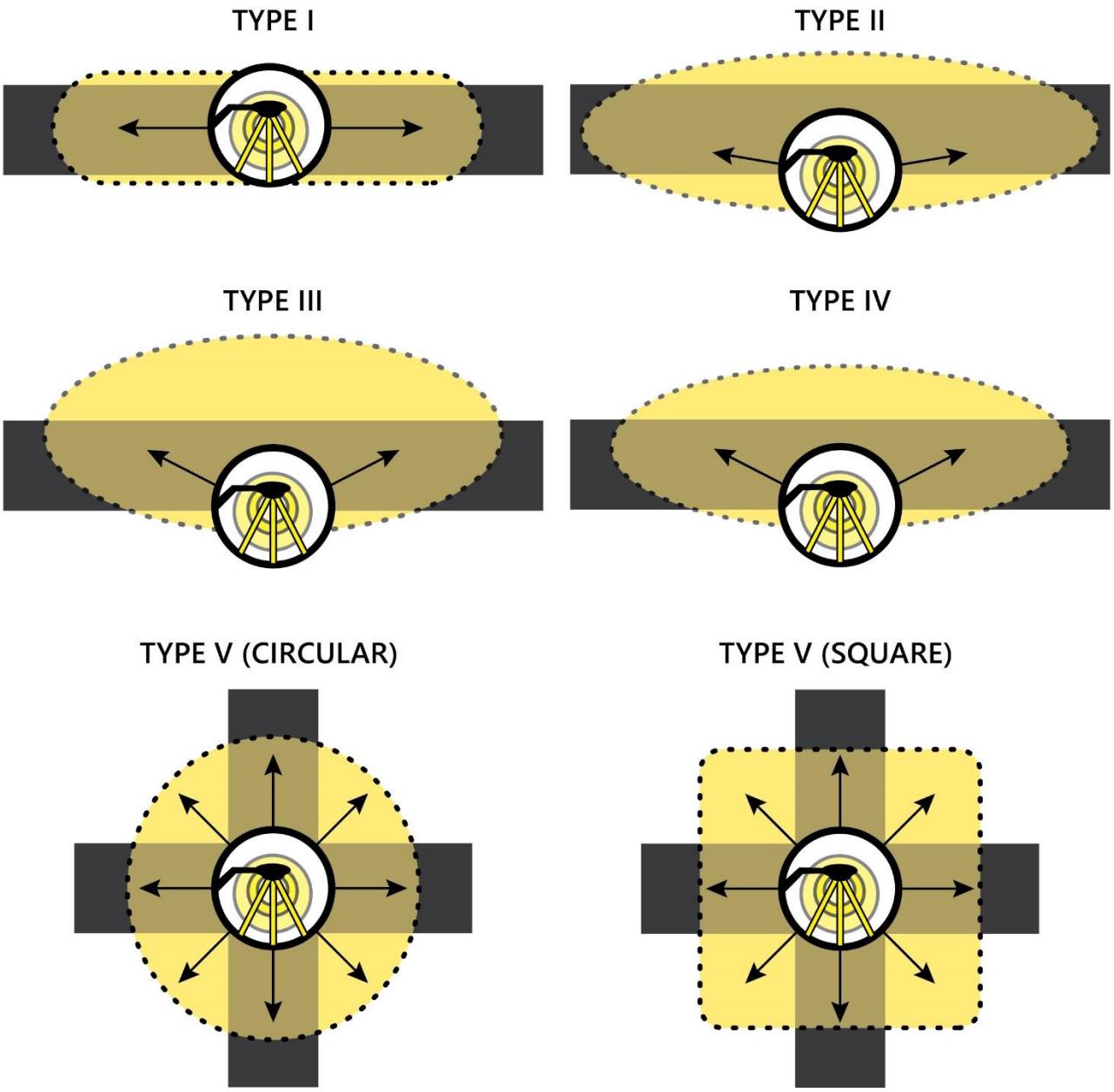


Figure 14. Graphic. General representation of IES distribution types. Modified from IES RP-8-18. Source: FHWA.

2.3.2. Pedestrian Considerations for Equipment Selection

One of the primary factors in selecting equipment is the mounting height of the luminaire, which is typically measured from the pavement surface to the light source. Luminaire mounting height plays a significant role in designing for pedestrian lighting facilities, and sometimes, the selected mounting height is lower than in lighting systems installed exclusively for roadway lighting.

In the FHWA research report *Street Lighting for Pedestrian Safety*, an experiment compared the detection distances for drivers of motor vehicles when viewing pedestrians when under pedestrian scale lighting (mounting height less than 6.5 m or 20 ft) and road scale lighting (mounting height greater than 6.5 m or 20 ft). Results of the experiment indicate an increase in detection distance when pedestrian scale lighting was present. Detection distances also increased with higher levels of pavement luminance (Terry et al., 2020). Figure 15 shows the two-way interaction between light type and luminance for pedestrian scale lighting. The figure is based on the FHWA research report *Street Lighting for Pedestrian Safety* (Terry et al., 2020). Based on the findings of this research, mounting heights of less than 6.5 m or 20 ft provide improved visual performance in areas where pedestrians are present. There is an expected trend downward from higher luminance levels (2 cd/m^2) to medium (1 cd/m^2) to low (0.5 cd/m^2). For road scale, the higher luminance produced longer detection distances as expected, but low and medium averages were not significantly different.

A disadvantage of pedestrian scale lighting is an increase in the glare produced by the light source, as these lower luminaires are closer to the line of sight of the driver. When pedestrian scale lighting is used, an additional 2 semi-cylindrical lux or 0.5 cd/m^2 allows for the lighting performance to overcome the increase in glare associated with lower mounting heights.

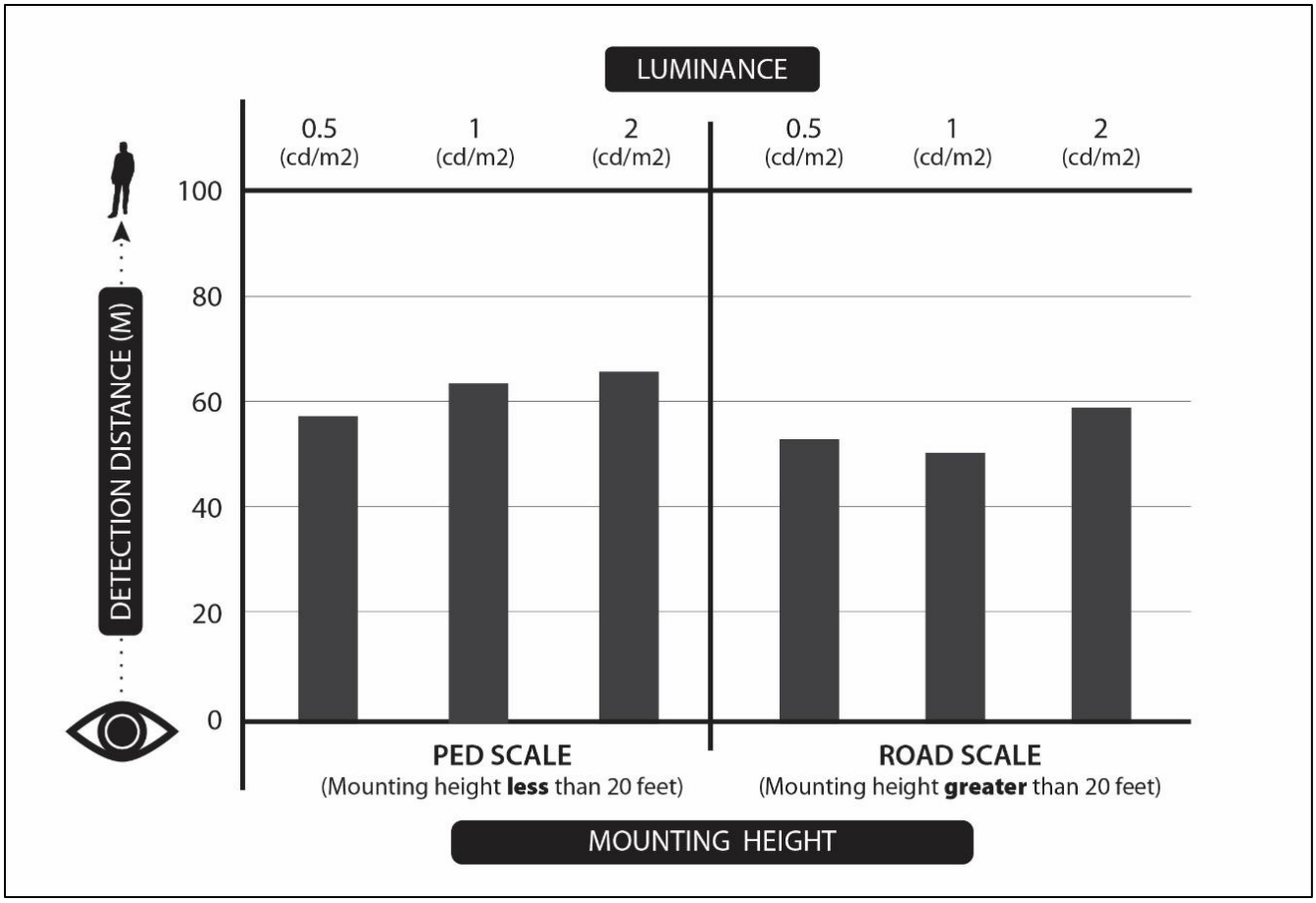


Figure 15. Graphic. Detection distance by light type and luminance. Source: FHWA.

Lower mounting heights are typically associated with a decrease in pole spacing to achieve the desired design criteria, since the effective area illuminated by each light source becomes smaller. As the pole spacing decreases, the required total number of poles for a lighting system increases. Selection of appropriate wattage for the luminaires allows the designer to balance the benefits of pedestrian scale mounting heights with the increased energy consumption. Many luminaires are available in a range of wattage options while maintaining aesthetics.

Selection of appropriate IES distribution type is especially relevant when considering pedestrian lighting systems. Distribution types are selected with the facility and pole layout in mind and can considerably affect the required pole spacing and efficiency of the lighting system. For pedestrian facilities that tend to be relatively narrow and linear in nature, selection of a Type I or Type II luminaire allows for more light to be directed toward the design facility while limiting light trespass. Figure 16 shows a conceptual example of variable mounting heights within the public right-of-way to achieve the visibility needs of different road users.

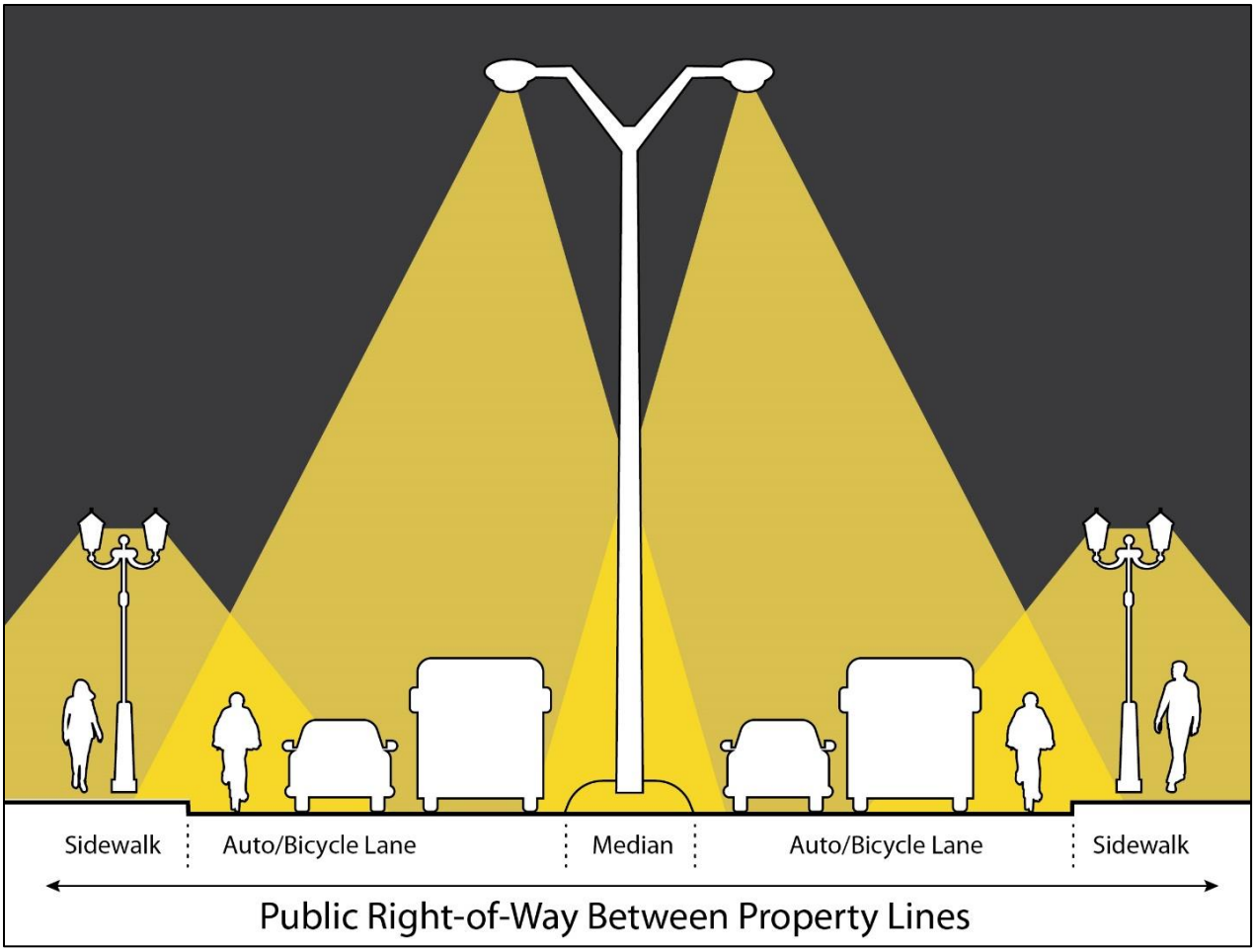


Figure 16. Graphic. Variable mounting heights within public right-of-way. Source: FHWA.

2.4. Determination of Control Strategy

2.4.1. General Principles of Control Strategies

A lighting control system is a set of hardware and software that adjusts power and light output for a lighting installation. Control strategies vary from a simply on/off setting triggered at dusk and dawn, to fully adjustable dimming controls that respond to a programmable schedule or motion in the project area. The designer's selection of the proper control strategy is based on input from the maintaining agency and local community, as well as on characteristics of the project location, including vehicle or pedestrian activity.

2.4.2. Pedestrian Considerations for Control Strategies

Adaptive lighting, an approach to lighting that adjusts the light output based on the presence or volume of road users, is a lighting control strategy that is particularly beneficial when applied to pedestrian lighting systems. An FHWA report, *Design Criteria for Adaptive Roadway Lighting*, provides a proposed set of adaptive lighting criteria

to assist in the decision of whether to provide adaptive lighting (Gibbons et al., 2014a). Its companion report, *Guidelines for the Implementation of Reduced Lighting on Roadways*, establishes the criteria for determining appropriate lighting levels based on roadway characteristics and usage (Gibbons et al., 2014b).

Common application of an adaptive lighting system includes dimming of the lighting system based on pedestrian count data. In areas where pedestrian volumes are high (more than 100 pph) during the evening hours and low (0 to 10 pph) in late night hours, an adaptive lighting control system can be dims the light output when pedestrian volumes, and corresponding recommended design criteria, decrease. Adaptive lighting systems may also be programmed for special events and time of day schedules, which is particularly beneficial in school zones and public parks.

Where adaptive lighting is used, varying levels of light output can be programmed, but turning off the lighting system completely can cause potential risks or concerns for the local community. Dimming may not be noticeable to the casual observer; however, once lighting has been installed, there is a general expectation that the facility will remain lit during hours of darkness. In cases where low pedestrian volumes occurring during certain hours of the night do not warrant lighting, the adaptive lighting system can be programmed to maintain a low level of lighting.

2.5. Design and Verification

2.5.1. General Design Process

Once the need for lighting has been established, and the designer has selected design criteria, lighting equipment, and control strategy, the lighting system is then designed in a photometric analysis software package. There are several market ready software tools capable of detailed illuminance, luminance, and glare calculations. Using site survey data and the selected lighting equipment, the designer can use this software to develop a three-dimensional model of a proposed light pole layout. The photometric analysis provides calculated results for illuminance, luminance, glare, and other metrics that are used to evaluate the proposed lighting layout. The calculated photometric results are then compared to both the primary and the secondary criteria. If the criteria are not appropriately met, the layout is refined through a change in pole spacing, offset from the roadway, mounting height, or luminaire selection. This iterative process continues until the design is optimized, when the selected design criteria are met while minimizing the number of poles and luminaires.

Pole placement is a critical step in the design process that, in addition to affecting the lighting results, includes consideration of local and State requirements, utility conflicts, and ease of maintenance, among other factors. Additional information about pole placement is included in the AASHTO *Roadside Design Guide, 4th Edition* (AASHTO, 2011).

2.5.2. Pedestrian Considerations for the Design Process

The process of developing a photometric model and selecting a lighting layout for pedestrian lighting systems is similar to other roadway lighting designs; however, there are some key elements of a pedestrian lighting system for the designer to consider, including light pole placement, contrast, and calculation grid location.

Often, the overall layout of light poles on a pedestrian facility may be governed by one or several critical pole locations. For example, midblock crossings and intersections may require a particular pole location to provide the optimal vertical illuminance and positive contrast of pedestrians in a marked crosswalk. Contrast is the measurable visible difference between a target and the target's background. Positive contrast results in the target being brighter than its background and negative contrast results in the target being darker than its background, as illustrated in figure 17. FHWA's *Informational Report on Lighting Design for Midblock Crosswalks* provides additional information regarding proper light pole location (Gibbons et al., 2008). Placement of these critical pole locations first, before locating other poles based on a set spacing, results in improved contrast and visual performance in midblock crossings.

Figure 17. Photograph. Examples of negative and positive contrast. Source: FHWA.

For the calculation and the verification of the lighting in the pedestrian sidewalks areas, locate the calculation grid centered in the design area with a maximum spacing of 2 m (6.5 ft) between grid points in each direction. Calculation points for vertical or semi-cylindrical illuminance should be located at a height of 1.5 m (5 ft) above the pavement surface and centered in the sidewalk or pathway.

3. Design Example

The design example included in this chapter details a typical scenario for lighting pedestrian facilities. It presents the key characteristics of the location and illustrates the application of the process described in Section 2. This example does not cover all potential scenarios related to lighting for pedestrian safety, but it is designed to demonstrate the information provided in the previous sections of this primer. The example begins by describing the scenario and progresses through sections devoted to each of the steps in the process laid out in Section 2, as follows:

1. *Assessment of potential lighting needs.*
2. *Selection of design criteria.*
3. *Equipment selection.*
4. *Determination of control strategy.*
5. *Design and verification.*

3.1. Example Scenario

This scenario focuses on a segment of an urban five-lane arterial roadway running between two intersections, as shown in figure 18. On the north side of the subject roadway is a park and on the south side is an elementary school, served by a driveway. This segment of the roadway is marked as a school zone, and there is a transit stop in the study area that serves the park and school. The peak hourly pedestrian volumes occur just before and after school hours, as this street is used by many students and families living in the nearby neighborhoods to access the school and park. It is also used frequently outside of school hours. The peak pedestrian volumes sometimes occur in dark conditions, depending on time of year.

Figure 19 shows a rendering of an urban five-lane arterial with a midblock crosswalk and a transit stop, similar to the scenario used in this example.

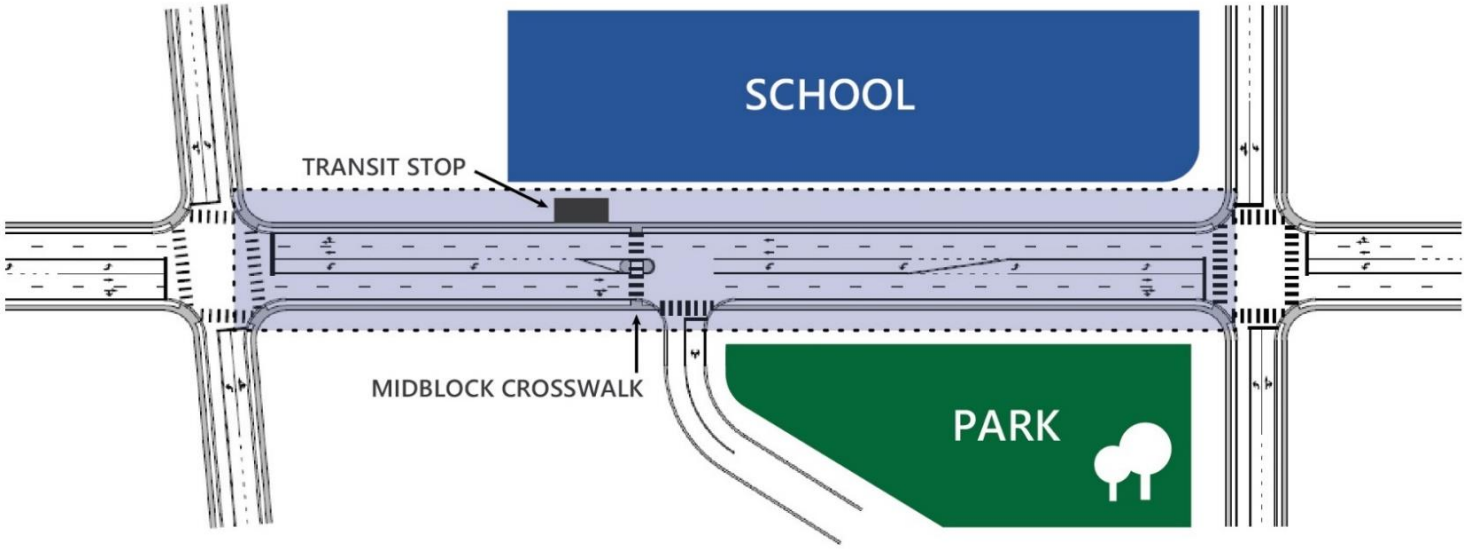


Figure 18. Graphic. Sketch of example scenario. Source: FHWA.

Figure 19. Graphic. Rendering of urban five-lane arterial with midblock crosswalk and transit stop similar to the example scenario. Source: The Greenway Collaborative, Inc.

3.2. Assess Lighting Needs

The first step is to identify the lighting needs in the given scenario. This example includes several different pedestrian facility types. There are intersection crossings at the two intersections, with marked crosswalks on all four approaches of each intersection. There is a midblock crosswalk near the school driveway to connect the school property to the park. Finally, there are sidewalks along both sides of the subject roadway. In addition to these pedestrian facilities, there is also the roadway itself to be considered in the lighting design process. The designer should also be aware of the role that lighting plays both in terms of safety and security for users of the transit stop located in the study area.

Note that this example will focus on the area of the subject roadway between the two intersections, inclusive of the inner crosswalks across the major road at each intersection (as indicated by the shaded area in figure 18). However, the process and criteria for lighting the intersection crosswalks not included in the shaded area would be the same as the process illustrated in this example.

3.3. Select Design Criteria

The next step is to select the lighting design criteria for each of the facility types identified. This example focuses on primary criteria, or the desired lighting levels that the system is designed to provide in the project area. The designer can also consider secondary criteria, such as aesthetics or ability to limit light trespass. Section 2.2.2 contains more information and resources regarding secondary criteria.

As previously noted, this example contains marked crosswalks (both midblock and at intersections) and pedestrian facilities adjacent to the roadway (i.e., sidewalks). Table 3 in Section 2.2.3 of this document summarizes the design criteria for these pedestrian facilities. The table of criteria is recreated below as table 4 and the criteria selected based on the characteristics of the example are denoted with bolded text. Intersection crosswalks should have an average of 30 lux vertical illuminance. Midblock crosswalks should have an average of 20 lux vertical illuminance. There are two options for average illuminance of adjacent pedestrian facilities, or sidewalks, depending on pedestrian activity. In this case, since the subject roadway is in a school zone, the sidewalks should have 10 lux semi-cylindrical illuminance. The average luminance of the roadway should be 2 cd/m^2 since the study area is urban and the subject roadway is in a school zone. Finally, the chosen luminaires should have a CCT of 3000 K to 4000 K at all locations.

Refer to section 2.2 for a detailed discussion of lighting design criteria.

Table 4. Selected design criteria for example scenario[1].

Pedestrian facility characteristics		Light Source Characteristics			
		Average Illuminance	Average Luminance		CCT (LED only)
			Rural	Urban	
Intersection crosswalk		**30 lux vertical**	*	*	**3000 K to 4000 K**
Midblock crosswalk		**20 lux vertical**	*	*	**3000 K to 4000 K**
Facility adjacent to roadway	Low[2] to Medium[3] Pedestrian Activity	2 lux vertical	*	1 cd/m^2	3000 K to 4000 K
	High[4] Pedestrian Activity and/or School Zones	**10 lux SC**	1 cd/m^2	**2 cd/m^2**	**3000 K to 4000 K**

*Use minimum maintained average pavement luminance criteria from RP-8-18.

1 Values are for roadway scale luminaire heights (6.5m or 20 ft or higher). For pedestrian scale lighting (6.5m in height or lower), add 2 vertical lux and 0.5 cd/m2 to the criteria to overcome increased glare resulting from the use of a lower mounting height.

2 Low Pedestrian Activity (10 or fewer pedestrians per hour) – Areas with very low volumes of pedestrians during hours of darkness. Examples may include suburban streets with single family dwellings, very low-density residential developments, and rural or semi-rural areas.

3 Medium Pedestrian Activity (11-100 pedestrians per hour) – Areas where lesser numbers of pedestrians are expected during hours of darkness. Examples may include downtown office areas, libraries, apartments, neighborhood shopping, industrial, parks, and streets with nearby transit lines.

4 High Pedestrian Activity (over 100 pedestrians per hour) – Areas with significant numbers of pedestrians expected during hours of darkness. Examples may include downtown retail areas, theaters, concert halls, stadiums, and transit terminals.

3.4. Select Equipment

The next step is to select lighting equipment that will enable the design to meet the identified criteria. Lighting equipment selection typically depends on local inventory and the preferences of the local agency. In this case, the lighting design will use the roadway cobrahead style LED luminaires (see figure 20). Selection of luminaires is often based on local inventory and standards, and in this example, cobrahead luminaires have been selected for consistency within the local municipality, which in turn results in ease of maintenance and familiarity to road users. The design will use a color temperature of 3000 K (which is within the recommended range presented in table 3), 204 W of power, and an IES distribution of Type II (as illustrated previously in figure 14). Type II provides a shallower distribution angle that will result in greater longitudinal illumination of the sidewalks while also casting light onto the roadway.

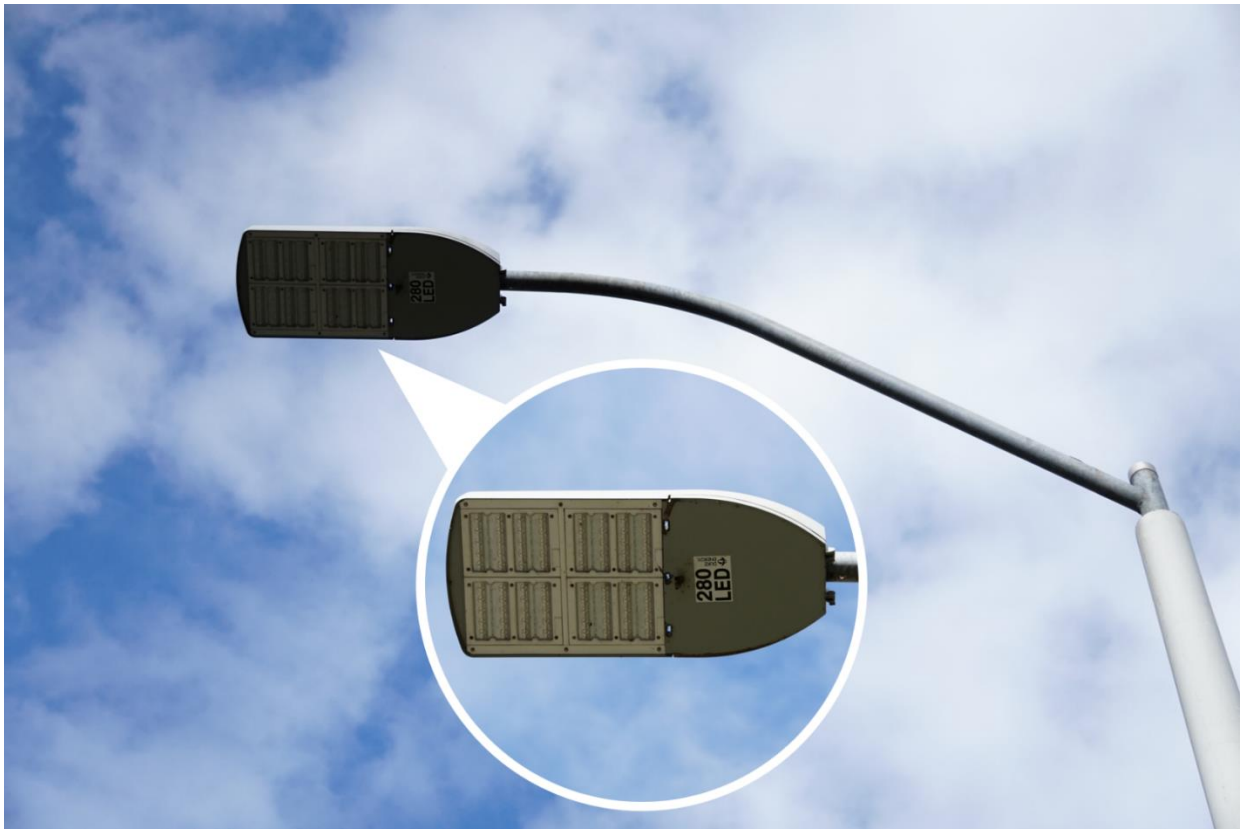


Figure 20. Graphic. Example LED cobrahead roadway luminaire. Source: FHWA.

Given the width of the roadway cross-section, the use of pedestrian scale mounting heights (20 feet or less) alone may not provide adequate illumination or uniformity across all roadway travel lanes. Therefore, a roadway scale mounting height, or a combination of pedestrian scale and roadway scale luminaires, is more appropriate to meet the design goals. Additionally, the cobrahead luminaires that are selected for use are intended for roadway scale mounting heights. For this example, the luminaires will be mounted at a height of 35 feet. They will be positioned on both sides of the roadway in a staggered layout to adequately light the entire width of the pavement and adjacent pedestrian facilities.

Refer to section 2.3 for a detailed discussion of lighting equipment selection, including the trade-offs between roadway scale lighting and pedestrian scale lighting.

3.5. Determine Control Strategy

The lighting control strategy determines when and at what level the lighting operates. In this example, the lighting system will use traditional photocell "dusk-to-dawn" operation.

For locations with variable pedestrian volumes and where lighting impacts to the surrounding area are of concern, consideration may be given to the use of adaptive lighting systems. Methods for applying adaptive lighting technologies are included in IES RP-8-18 as well as NCHRP Research Report 940, *Solid-State Roadway Lighting Design Guide, Volume*

2: Research Overview (Lutkevich et al., 2020). These methods are not required under FHWA regulations. Refer to section 2.4 of this primer for more information on control strategies, including a discussion of adaptive lighting in the context of lighting for pedestrians.

3.6. Design and Verification

After identifying design criteria, selecting equipment, and determining the control strategy, the remaining step is to design the lighting system and verify that it meets the design criteria. This is done using a photometric analysis software package, of which there are several options that operate in a similar manner. The discussion presented in this example should apply generally to all of them.

The software works by calculating the lighting metrics (luminance, illuminance, etc.) at points laid out across the study area in grid pattern, based on a given selection and layout of light sources. The grid is established based on existing guidance, with roadway illuminance points (per IES RP-8-18) and semi-cylindrical illuminance points (per CIE, 2000). All vertical and semi-cylindrical illuminance points are located 4.9 ft (2 m) above the roadway surface to represent the typical height of a pedestrian, with a maximum spacing of 6.5 ft. Roadway luminance points are located with a maximum spacing of 16.4 ft.

For each of the luminaire models selected for a given design, a data file (IES file format) typically provided by the lighting manufacturer is imported into the lighting software. The data file includes information about the luminaire's spatial light distribution and intensity for use in the lighting model. When importing IES files, a light loss factor (LLF) is typically applied to account for depreciation of light output over time. During the lifecycle of a lighting installation, light output is expected to decrease due to dirt and dust accumulation, lamp lumen depreciation and ambient temperature changes, among other physical and environmental factors. Therefore, a light loss factor checks that a lighting design will meet the selected design criteria throughout the expected service life. For this design, a total light loss factor of 0.85 is applied to each luminaire IES file, which is typical for many LED light sources.

The first step is to identify critical locations where luminaire placement is either important to achieve design goals, or highly constrained due to roadway geometrics, utility conflicts, or other obstacles. These critical luminaires are often located near midblock crossings or intersections. They should be placed in advanced of crosswalks to create positive contrast (as illustrated previously in figure 17). In this example, the critical luminaires are the two at the midblock crosswalk and one each at the intersection crosswalks, as shown in figure 21. They are placed behind the sidewalk. Critical luminaire locations may also include areas where existing utility conflicts, driveways, or landscaping significantly influence the placement of a pole.

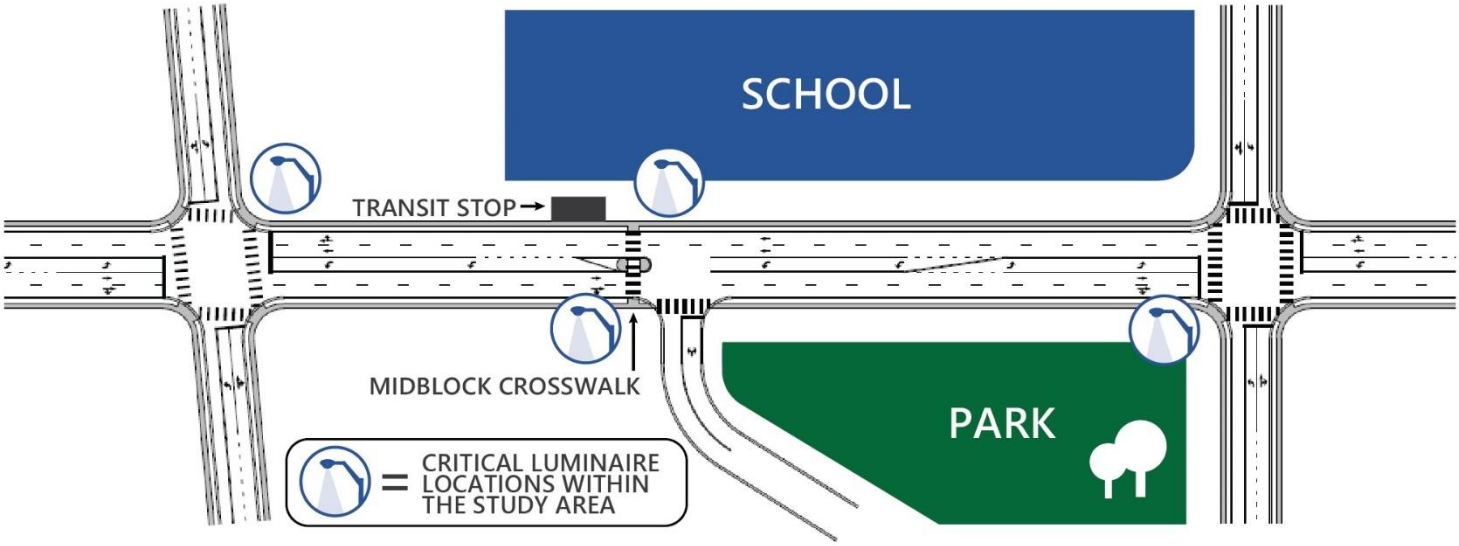


Figure 21. Graphic. Critical luminaire locations within the study area. Source: FHWA.

Once the locations of the critical luminaires have been selected, the designer continues by filling in the remaining space behind the sidewalk along both sides of the roadway with luminaires in a staggered layout, trying to keep roughly equal spacing between them. In this case, the placements result in approximately 200 ft between light poles. This spacing is a reasonable starting point, however the design process will determine whether this spacing is valid or should be revised to achieve the design criteria.

At this point, the photometric analysis software package calculates the results for the design and shows that they are too low to meet the targeted design criteria. The criteria and results are shown in table 5, where the bolded rows indicate items that did not meet the target criteria. As discussed in section 2.5, lighting design relies on an iterative process, so this is not unexpected. Since the calculated average lighting levels are lower than the target design criteria, while the average-to-minimum uniformity ratios are acceptable per RP-8-18 criteria, the design must be revised to provide higher average illuminance in the project area (IES, 2018). The designer may choose to decrease the pole spacing to achieve greater illumination; however, this will result in an increase in the required number of poles. In the interest of reducing construction and maintenance costs by requiring the fewest number of light poles, a logical next step is to increase the input power to each luminaire while keeping all other inputs the same, including the pole spacing. In this example, the next iteration will use a 268 W luminaire from the same manufacturer, an increase from the 204 W luminaire originally selected.

Table 5. Summary of initial lighting design criteria and calculation results.

Calculation Zone	Calculation Type	Units	Target Criteria	Calculation Results
			Average	Average
Midblock Crosswalk	**Vertical Illuminance**	**Lux**	**20**	**19.06**
Intersection Crossing (West)	**Vertical Illuminance**	**Lux**	**30**	**19.26**
Intersection Crossing (East)	**Vertical Illuminance**	**Lux**	**30**	**18.23**
Sidewalk (North)	**SC Illuminance**	**Lux**	**10**	**7.63**
Sidewalk (South)	**SC Illuminance**	**Lux**	**10**	**7.73**
Roadway (Westbound)	**Luminance**	**Cd/m^2**	**2.0**	**1.92**
Roadway (Eastbound)	**Luminance**	**Cd/m^2**	**2.0**	**1.92**

Note: Additional lighting design criteria recommended in IES *RP-8-18* should be evaluated and considered for uniformity and glare.

Upon calculating the results again with the photometric analysis software package, the results show that the midblock crosswalk, sidewalk, and roadway meet the design criteria. However, the intersection crossings do not meet the vertical illuminance requirement, particularly at the grid points towards the centerline of the roadway (furthest from the light poles). Table 6 summarizes the criteria and results, with the items that did not meet criteria shown in bold.

Because in this case the lighting design is not meeting criteria in a targeted location, the design can incorporate some minor adjustments. Although the criteria could be achieved by further increasing the wattage of all luminaires, doing so would over-illuminate much of the project area, and may increase glare. Individual adjustment of pole locations where necessary allows for the design to maintain consistent use of the same luminaires and will not change the calculated results for other areas of the project area which are satisfactory. First, to fine-tune the pole placements at the intersections, the designer can move them closer to the sidewalk and closer to the intersection crosswalk. Additionally, the designer can adjust the mounting height from 35 ft to 30 ft for the pole closest to each intersection crossing. These adjustments will increase the amount of vertical illuminance at the targeted locations.

Table 6. Summary of revised lighting design criteria and calculation results.

Calculation Zone	Calculation Type	Units	Target Criteria	Calculation Results
			Average	Average
Midblock Crosswalk	Vertical Illuminance	Lux	20	25.19
Intersection Crossing (West)	**Vertical Illuminance**	**Lux**	**30**	**25.46**
Intersection Crossing (East)	**Vertical Illuminance**	**Lux**	**30**	**24.10**
Sidewalk (North)	SC Illuminance	Lux	10	10.09
Sidewalk (South)	SC Illuminance	Lux	10	10.21
Roadway (Westbound)	Luminance	Cd/m^2	2.0	2.53
Roadway (Eastbound)	Luminance	Cd/m^2	2.0	2.54

Note: Additional lighting design criteria recommended in IES *RP-8-18* should be evaluated and considered for uniformity and glare.

The photometric analysis software package calculates the results one more time, which show that the resulting design now meets the design criteria for intersection crosswalk illuminance, midblock crosswalk illuminance, sidewalk semi-cylindrical illuminance, and roadway luminance. Table 7 shows the key criteria and results, and figure 22 shows a software rendering of the final lighting design.

Table 7. Summary of final lighting design criteria and calculation results.

Calculation Zone	Calculation Type	Units	Target Criteria	Calculation Results
			Average	Average
Midblock Crosswalk	Vertical Illuminance	Lux	20	25.19
Intersection Crossing (West)	Vertical Illuminance	Lux	30	30.87
Intersection Crossing (East)	Vertical Illuminance	Lux	30	31.29
Sidewalk (North)	SC Illuminance	Lux	10	10.02
Sidewalk (South)	SC Illuminance	Lux	10	10.02
Roadway (Westbound)	Luminance	Cd/m^2	2.0	2.54
Roadway (Eastbound)	Luminance	Cd/m^2	2.0	2.56

Note: Additional lighting design criteria recommended in IES *RP-8-18* should be evaluated and considered for uniformity and glare.

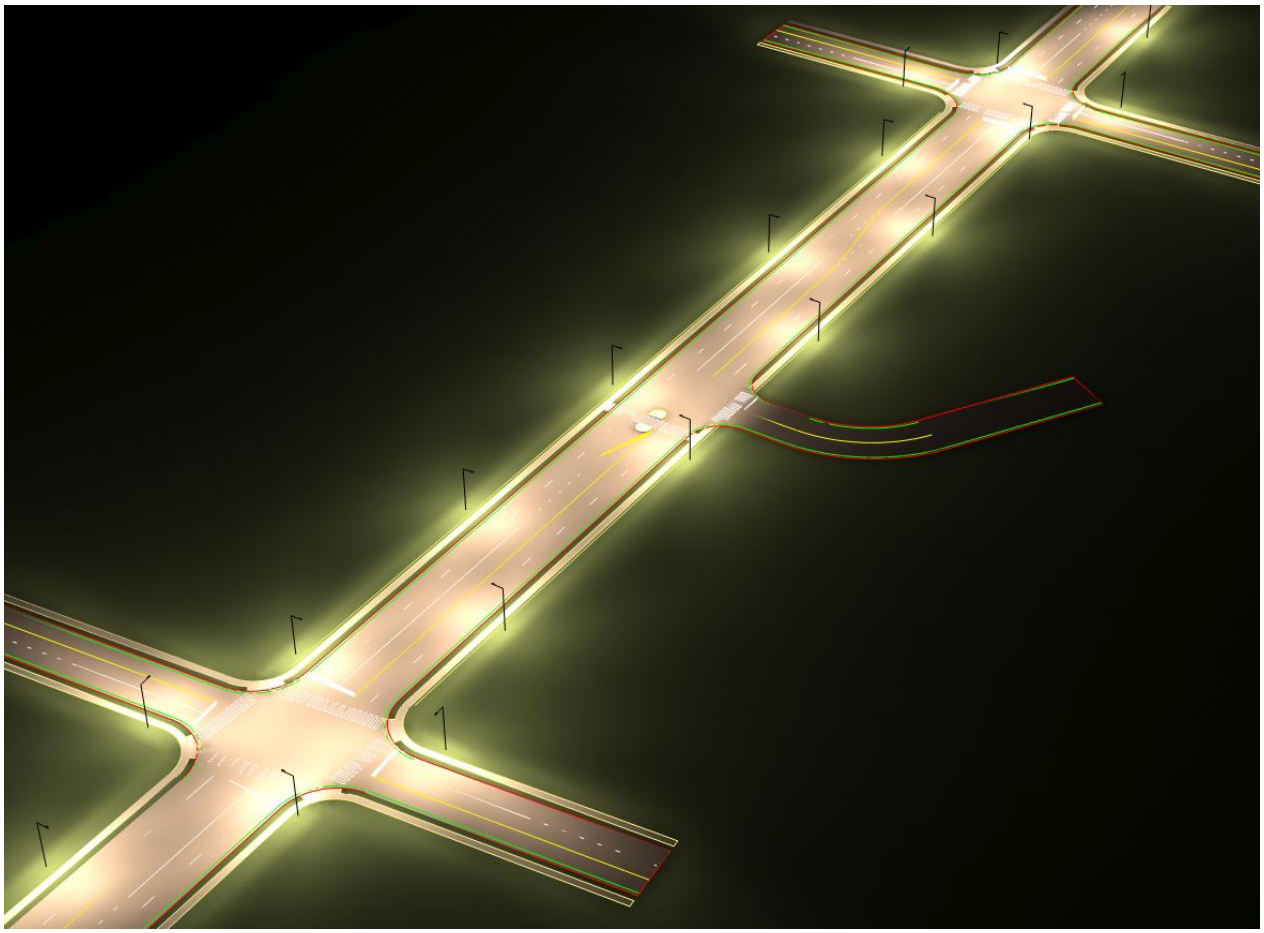


Figure 22. Graphic. Software rendering of final lighting design for example scenario. Source: FHWA.

This example presented the key characteristics of the location and illustrated the application of the pedestrian lighting design process described in Chapter 2, from assessment of lighting needs through design and verification. A comparison of the final calculation results to the selected design criteria reveals that the primary design goals of the lighting layout are achieved. The average luminance and illuminance metrics for each various type of facility (crosswalks, sidewalks, and roadway segments) are met or exceeded with the selected lighting design.

4. Summary and Conclusion

This primer is intended to be a resource for transportation practitioners interested in lighting design considerations for locations with pedestrian activity. The primer highlights how the results from the companion FHWA research report, Street Lighting for Pedestrian Safety (Terry et al., 2020), can complement lighting design information in commonly used lighting design guides.

The **introduction** to the primer establishes an understanding of recent trends in pedestrian safety and security in dark or nighttime conditions. It presents a summary of existing research indicating the benefits of lighting for improving pedestrian safety, citing studies that resulted in CMFs that quantify reductions in the number of vehicle/pedestrian crashes due to lighting ranging from 0.58 (42 percent reduction) to 0.19 (81 percent reduction), depending on crash severity (CMF IDs 435, 436, 440, 441, and 2379). It presents an overview of the relevant existing guidance, as well as gaps identified in the companion research report.

Section 2 walks through the lighting design process, with specific consideration of pedestrian lighting criteria and design considerations. The material in Chapter 2 is organized by the major steps of lighting design:

- Assessment of lighting needs.
- Selection of design criteria.
- Equipment selection.
- Determination of control strategy.
- Design and verification.

For each step of the lighting design process, the primer provides 1) an overview of selected terminology and general lighting design considerations with references to other resources for additional information and 2) specific lighting design considerations for pedestrians. The selection of lighting criteria for pedestrian facilities draws on information from two FHWA research and informational reports on pedestrian lighting: *Street Lighting for Pedestrian Safety* and *Informational Report on Lighting Design for Midblock Crosswalks*, as well as other commonly referenced lighting resources, such as RP-8-18 (Terry et al., 2020; Gibbons et al., 2008; IES, 2018).

Section 3 presents a lighting design example that depicts a typical scenario for lighting pedestrian facilities. The example walks through the site characteristics, design criteria, application of the design approach and interpretation of analysis results, and other considerations.

While not a focus of this primer, evaluating the success of lighting installations and maintaining their performance are key to sustaining lighting benefits over time. Systematic and data-driven maintenance and evaluation approaches can address racial and socio-economic disparities that exist in lighting maintenance processes driven only

by self-reporting. In addition, community engagement programs that communicate with residents across geographic, socio-economic, racial, and language boundaries can assess whether lighting investments are meeting community needs.

As this primer has illustrated, lighting of pedestrian facilities is key to increasing the safety performance of the roadway network for all users. Effective pedestrian lighting is a means of addressing the vulnerability of pedestrians during dark conditions and improving the safety and security of all road users spanning different ages and abilities. This primer, along with the companion FHWA research report, *Street Lighting for Pedestrian Safety* (Terry et al., 2020), can help transportation practitioners to realize the benefits of lighting designs and provide safer facilities for pedestrians at night.

5. References

AASHTO (2011). *Roadside Design Guide, 4th Edition.* American Association of State Highway and Transportation Officials, Washington, D.C.

AASHTO (2018). *Roadway Lighting Design Guide, 7th Edition.* American Association of State Highway and Transportation Officials, Washington, D.C.

American Medical Association (AMA). (2016). *Human and Environmental Effects of Lighting Emitting Diode (LED) Community Lighting.* Report of the Council on Science and Public Health. CSAPH Report 2-1-16. Retrieved from https://www.ama-assn.org/sites/ama-assn.org/files/corp/media-browser/public/about-ama/councils/Council%20Reports/council-on-science-public-health/a16-csaph2.pdf

ANSI/IES (2020). *Luminaire Classification System for Outdoor Luminaires* [ANSI/IES TM-15-20]. American National Standards Institute/Illuminating Engineering Society.

APTA (2009). *Security Lighting for Transit Passenger Facilities*. American Public Transportation Association, Washington, DC. Retrieved from https://www.apta.com/wp-content/uploads/Standards_Documents/APTA-SS-SIS-RP-001-10.pdf.

Bhagavathula, R., Gibbons, R. B., & Edwards, C.J. (2015). Relationship between Roadway Illuminance Level and Nighttime Rural Intersection Safety. *Transportation Research Record: Journal of the Transportation Research Board*, *2485*, 8-15. Retrieved from https://doi.org/10.3141/2485-02.

Boyce, P.R. (1973). Age, illuminance, visual performance and preference. *Lighting Research & Technology, 5*(3), 125-144. Retrieved from https://doi.org/10.1177/096032717300500301.

Boyce, P.R., Eklund, N.H., Hamilton, B.J., & Bruno, L.D. (2000). Perceptions of safety at night in different lighting conditions. *Lighting Research and Technology, 32*, 79-91. Retrieved from https://doi.org/10.1177/096032710003200205.

Chalfin, A., Hansen, B., Lerner, J., & Parker, L. (2019). *Reducing Crime Through Environmental Design: Evidence from a Randomized Experiment of Street Lighting in New York City.* Crime Lab: New York. Retrieved from https://urbanlabs.uchicago.edu/attachments/e95d751f7d91d0bcfeb209ddf6adcb4296868c12/store/cca92342e666b1ffb1c15be63b484e9b9687b57249dce44ad55ea92b1ec0/lights_04242016.pdf.

CIE (2000). *Technical Report: Road Lighting Calculations* [CIE 140:2000]. Commission Internationale de L'Eclairage, Vienna, Austria.

CIE (2010). *Lighting of Roads for Motor and Pedestrian Traffic* [CIE 115:2010]. Commission Internationale de L'Eclairage, Vienna, Austria.

Cuvalci , O. & Ertas, B. (2000). Roadway Lighting Design Methodology and Evaluation. *Journal of Integrated Design & Process Science, 4*(1), 1-23. Retrieved from https://content.iospress.com/articles/journal-of-integrated-design-and-process-science/jid4-1-01.

Economopoulos, I.G.A. (1978). Photometric parameters and visual performance in road lighting. Technische Hogeschool Eindhoven. Retrieved from https://doi.org/10.6100/IR117059.

Eloholma, M., Ketomaki, J., Orrevetelainen, P., & Halonen, L. (2006). Visual performance in night-time driving conditions. *Opthalmic and Physiological Optics: Journal of the College of Optometrists, 26*(3), 254-263. Retrieved from https://doi.org/10.1111/j.1475-1313.2006.00313.x.

Elvik, R. & Vaa, T. (2004). *Handbook of Road Safety Measures*. Elsevier, Oxford, UK.

FHWA. (2013a). "The Walking Environment: 4. Marked Crosswalks and Enhancements". Federal Highway Administration, Washington, DC. Retrieved from https://safety.fhwa.dot.gov/saferjourney1/library/countermeasures/04.htm.

FHWA. (2013b). "Sidewalks, Walkways and Paved Shoulders". PEDSAFE. Federal Highway Administration, Washington, DC. Retrieved from http://pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=1.

FHWA (2017). Nighttime Visibility. Federal Highway Administration, Washington, DC. Retrieved from https://safety.fhwa.dot.gov/roadway_dept/night_visib/.

FHWA (2018). Crosswalk Visibility Enhancements: Countermeasure Tech Sheet. Federal Highway Administration, Washington, DC. Retrieved from https://safety.fhwa.dot.gov/ped_bike/step/docs/techSheet_VizEnhancemt2018.pdf.

Gibbons, R.B., Edwards, C., Williams, B., & Anderson, C.K. (2008). *Informational Report on Lighting Design for Midblock Crosswalks* [FHWA-HRT-08-053]. Federal Highway Administration, Washington D.C. Retrieved from https://www.fhwa.dot.gov/publications/research/safety/08053/08053.pdf.

Gibbons, R., Guo, F., Medina, A., Terry, T., Du, J., Lutkevich, P., & Li, Q. (2014a). *Design Criteria for Adaptive Roadway Lighting* [FHWA-HRT-14-051]. Federal Highway Administration, Washington, DC. Retrieved from https://www.fhwa.dot.gov/publications/research/safety/14051/14051.pdf.

Gibbons, R., Guo, F., Medina, A., Terry, T., Du, J., Lutkevich, P., ..., & Vetere, P. (2014b). *Guidelines for the Implementation of Reduced Lighting on Roadways* [FHWA-HRT-14-050]. Federal Highway Administration, Washington, DC. Retrieved from https://www.fhwa.dot.gov/publications/research/safety/14050/14050.pdf.

Gibbons, R.B., Meyer, J.E., Terry, T.N., Bhagavathula, R., & Lewis, A., Flanagan, M., & Connell, C. (2015). *Evaluation of the Impact of Spectral Power Distribution on Driver Performance* [FHWA-HRT-15-047]. Federal Highway Administration, Washington, DC. Retrieved from https://rosap.ntl.bts.gov/view/dot/35871.

Griffith, M.S. (1994). Comparison of the Safety of Lighting Options on Urban Freeways. *Public Roads, 57*(2). Federal Highway Administration, Washington, DC. Retrieved from https://www.fhwa.dot.gov/publications/publicroads/94fall/p94au8.cfm.

Haans, A. & de Kort, Y.A.W. (2012). Light distribution in dynamic street lighting: Two experimental studies on its effects on perceived safety, project, concealment, and escape. *Journal of Environmental Psychology, 32*(4), 342-352. Retrieved from https://doi.org/10.1016/j.jenvp.2012.05.006.

He, Y., Rea, M., Bierman, A., & Bullough, J. (1997). Evaluating Light Source Efficacy under Mesopic Conditions Using Reaction Times. *Journal of the Illuminating Engineering Society, 26*(1), 125-138. Retrieved from https://doi.org/10.1080/00994480.1997.10748173.

IES (2018). *American National Standard Practice for Design and Maintenance of Roadway and Parking Facility Lighting* [RP-8-18]. Illuminating Engineering Society.

Jonah, B.A. & Engel, G.R. (1983). Measuring the Relative Risk of Pedestrian Accidents. *Accident Analysis & Prevention, 15*(3), 193-206. Retrieved from https://doi.org/10.1016/0001-4575(83)90019-2.

Lewis, A. (1999). Visual Performance as a Function of Spectral Power Distribution of Light Sources at Luminances Used for General Outdoor Lighting. *Journal of the Illuminating Engineering Society, 28*(1), 37-42. Retrieved from https://doi.org/10.1080/00994480.1999.10748250.

Loewen, L.J., Steel, G.D., & Suedfeld, P. (1993). Perceived safety from crime in the urban environment. *Journal of Environmental Psychology, 13*, 323-331. Retrieved from https://doi.org/10.1016/S0272-4944(05)80254-3.

Loukaitou-Sideris, A. (2010). What is Blocking Her Path? Women, Mobility, and Security. IN *Conference Proceedings 46: Women's Issues in Transportation: Report of the 4th International Conference; Volume 1: Conference Summary and Plenary Papers,* Transportation Research Board of the National Academies, 103-121, Washington, D.C. Retrieved from: https://www.nap.edu/download/22901

http://nap.edu/22901 What Is Blocking Her Path? Women, Mobility, and Security by Anastasia, Department of Urban Planning, University of California, Los Angeles (p. 118)

Lutkevich, P., Gibbons, R., Bhagavathula, R., & McLean, D. (2020). *Solid-State Roadway Lighting Design Guide: Volume 2: Research Overview* [NCHRP Research Report 940]. Transportation

Research Board, Washington, D.C. Retrieved from https://www.trb.org/Publications/Blurbs/180129.aspx.

Markvica, K., Richter, G., & Lenz, G. (2019). Impact of urban street lighting on road users' perception of public space and mobility behavior. *Building and Environment, 154*, 32-43. Retrieved from https://doi.org/10.1016/j.buildenv.2019.03.009.

Minoshima, O., Oka, K., Ikehara, K., & Inukai, N. (2006). Research on Accident Reduction by Intersection Lighting. Presented at the Road Engineering Association of Asia and Australasia (REAAA) Conference, Philippines.

Nasar, J.L., Fisher, B., & Grannis, M. (1993). Proximate physical cues to fear of crime. *Landscape and Urban Planning, 26,* 161-178. Retrieved from https://doi.org/10.1016/0169-2046(93)90014-5.

Nasar, J.L. & Jones, K.M. (1997). Landscapes of fear and stress. *Environment and Behavior, 29*, 291-323. Retrieved from https://doi.org/10.1177/001391659702900301.

NHTSA (2021). Traffic Safety Facts: Pedestrians [DOT-HS-813-079]. Retrieved from https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813079.

Oya, H., Ando, K., & Kanoshima, H. (2002). A Research on Interrelation between Illuminance at Intersections and Reduction in traffic Accidents. *Journal of Light & Visual Environment, 26*(1), 29-34. Retrieved from https://doi.org/10.2150/jlve.26.1_29.

Painter, K. (1996). The influence of street lighting improvements on crime, fear, and pedestrian street use, after dark. *Landscape and Urban Planning, 35*, 193-201. Retrieved from https://doi.org/10.1016/0169-2046(96)00311-8.

Painter, K. & Farrington, D.P. (1997). Crime reducing effect of improve street lighting: the Dudley project. In Clark, R.V. (1997), *Situational Crime Prevention: Successful Case Studies.* Retrieved from https://www.ojp.gov/ncjrs/virtual-library/abstracts/crime-reducing-effect-improved-street-lighting-dudley-project.

Peña-García, A., Hurtado, A., & Aguilar-Luzón, M.C. (2015). Impact of public lighting on pedestrians' perception of safety and well-being. *Safety Science, 78*, 142-148. Retrieved from https://doi.org/10.1016/j.ssci.2015.04.009.

Portland Bureau of Transportation (PBOT). (2019). *News Blog: PedPDX: Walking While Black.* Retrieved from https://www.portlandoregon.gov/transportation/article/725213

Portnov, B.A., Saad, R., Trop, T., Kliger, D., & Svechkina, A. (2020). Linking nighttime outdoor lighting attributes to pedestrians' feeling of safety: an interactive survey approach. *PLoS ONE, 15*(11). Retrieved from https://doi.org/10.1371/journal.pone.0242172.

Rea, M.S. (2000). *IESNA Lighting Handbook, 9th Edition.* Illuminating Engineering.

Safe Routes to School (2015). *Safe Routes to School Online Guide*. Retrieved from http://guide.saferoutesinfo.org/index.cfm.

Sullivan, J.M., and Flannigan, M.J. (1999). *Assessing the Potential Benefit of Adaptive Headlighting Using Crash Databases* [Report No. UMTRI-99-21]. University of Michigan Transportation Research Institute. Retrieved from https://deepblue.lib.umich.edu/handle/2027.42/49401.

TAC (2006). *Guide for the Design of Roadway Lighting* [PTM-LIGHTING06]. Transportation Association of Canada.

Terry, T., Brimley, B., Gibbons, R., & Carlson, P. J. (2016). *Roadway Visibility Research Needs Assessment* [FHWA-SA-17-031]. Federal Highway Administration, Washington, DC. Retrieved from https://rosap.ntl.bts.gov/view/dot/42850.

Terry, T., Gibbons, R., Kassing, A., Bhagavathula, R., & Lutkevich, P. (2020). *Research Report: Street Lighting for Pedestrian Safety* [FHWA-SA-20-062]. Federal Highway Administration, Washington, D.C.

Walton, N.D. & Rowan, N.J. (1974). *Warrants for Highway Lighting* [NCHRP Report 152]. Transportation Research Board, Washington D.C. Retrieved from https://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp_rpt_152.pdf.

Welsh, B.C. & Farrington, D.P. (2008). Effects of Improved Street Lighting on Crime. *Campbell Systematic Reviews, 4*(1), 1-51. Retrieved from https://doi.org/10.4073/csr.2008.13.

Ye, X., Pendyala, R.M., Washington, S.P., Konduri, K., & Oh, J. (2008). A Simultaneous Equations Model of Crash Frequency by Collision Type for Rural Intersections. Presented at the 87th Annual Meeting of the Transportation Research Board.

Zhou, H. & Hsu, P. (2012). Effects of Roadway Lighting Level on the Pedestrian Safety. Presented at the 9th International Conference of Chinese Transportation Professionals, 2009. Retrieved from https://doi.org/10.1061/41064(358)4y.