Forest Service Handbook
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Forest Service Handbook 7709.59 – Road System Operations and Maintenance Handbook
Zero Code

Amendment: 7709.59-2009-1

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Duration: This amendment is effective until superseded or removed.

Superseded Directive: 7709.59_contents (Amendment 7709.59-91-1, 03/01/1991); 7709.59_zero_code (Amendment 7709.59-91-1, 03/01/1991); 10 (Amendment 7709.59-91-1, 03/01/1991); 20.1-23.23 (Amendment 7709.59-91-1, 03/01/1991); 24-27 (Amendment 7709.59-91-1, 03/01/1991); 30 (Amendment 7709.59-91-1, 03/01/1991); 40 (Amendment 7709.59-91-1, 03/01/1991); 50 (Amendment 7709.59-91-1, 03/01/1991)

Approved by: Gloria Manning, Associate Deputy Chief, NFS

Date approved: January 30, 2009

Responsible Staff:

Explanation of changes: Following is an explanation of the changes throughout the directive by section.

7709.59: This amendment changes the title from "Transportation System Operation Handbook" to "Road System Operations and Maintenance Handbook."

02: Revises objectives to include results of both operations and maintenance and for protecting investments, resources, and environment.

03: Removes cross-references to FSM 2350, FSM 2730, and FSM 5460. Adds references to maintenance.

05: Removes cross-references to definitions in FSH 7709.16, FSM 2353.05, FSM 2355.05, FSM 5460.5, and FSM 5467.05.

06: Changes caption from "Process for Access Management" to "Process for Travel Management" and sets forth new direction on current travel planning process. Revises exhibit 01 to illustrate the process for the travel management process.

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08: Removes code, caption, and reference documentation.

10: Changes the chapter title from "Planning" to "Road Management" and sets forth revised direction previously set out in 7709.55, chapter 30, "Planning for Projects." Changes cross-references from FSM 7711 to FSM 7711.1 and FSM 7712.31 to FSM 7714.

11.1: In paragraph 1b, adds travel analysis and existing legal agreements and contracts to sources of information list and removes access management objectives. In paragraph 3, sets forth new direction on use of considerations derived from travel planning and travel analysis to include Environmental and Resource Considerations, Legal Requirements, Road Users, Vehicle Characteristics, Traffic Requirements, Safety, and Economics. Clarifies direction that road management objectives are not decision documents, but are certified documentation of decisions.

11.2: Changes caption from "OHV Use on Forest Development Roads" to "Coordination of Uses on National Forest System Roads" and sets forth new direction to follow guidance in 7709.59 section 52 for coordinating Highway Legal and Non-Highway Legal vehicles.

11.3: Sets forth new direction to use the RMO Module of Infra Travel Routes and that the electronic record must be printed and signed by the certifying line officer. Updates exhibit 01 using a sample of the electronic output of an RMO developed through the Infra module.

20: Throughout the chapter, changes the term "Forest development road(s)" to "National Forest System road(s)." Makes other technical and editorial changes.

20.11: Revises cross-reference of the Organic Administration Act to emphasize statutory right to use existing roads as opposed to statutory right to mine for minerals.

20.12: Updates cross-reference to Title 36, Code of Federal Regulation, Part 212 to reflect the Travel Management Rule. Adds new prohibitions in paragraph 3, prohibited activities, to cross-reference Title 36, Code of Federal Regulations, section 261.13 and Title 36, Code of Federal Regulations, section 261.14.

20.3: Removes code, caption, and direction for "Policy."

20.41: Changes caption from "Regional Forester and Experiment Station Directors" to "Regional Foresters." Clarifies and adds new regional forester responsibilities.

20.42: Changes caption from "Forest Supervisors and Administrator of the Lake Tahoe Basin Management Unit" to "Forest Supervisors and Management of Other Administrative Units of the National Forest System."

20.5: Removes code and caption for "Definitions" and removes obsolete terms.

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21: Adds cross references to Title 23, Code of Federal Regulations, section 660.103 and FSM 7705.

21.2: Adds direction that roads included in the "Schedule A" of Forest Road Agreements are considered to be on the transportation system. Revises direction on expenditure of funds for maintenance of private roads to assure appropriations under Title 23, United States Code, section 205 are not used for such purposes.

22: Removes direction on Forest Service rights on public roads and recodes to section 22.1.

22.1: Recodes to this section direction on Forest Service rights on public roads previously set out in section 22. Removes obsolete direction stating, "use of roads built under the Act of July 26,1866, and which are being maintained by the Forest Service cannot be restricted."

23: Changes caption from "Traffic Rules and Orders" to "Traffic Rules, Designations, and Orders." Changes cross-reference from Title 36, Code of Federal Regulations, section 212.7 to Title36, Code of Federal Regulations, section 212.5.

23.1: Revises exhibit 01. Adds examples to include limiting motor vehicle use to designated roads, trails, and areas as shown on a use map; limiting over-snow vehicle use on roads as shown on a use map; and prohibiting use of vehicles not state licensed and/or driven by state licensed operators. Removes examples prohibiting passenger cars on a four wheel drive way, prohibiting motorcycles on a road, restricting commercial haul to certain hours of the day, superseding State law for vehicle length or width, and superseding State law to allow OHV/ORV use on a road.

23.22: Adds direction in paragraph 2 that establishing a speed limit requires engineering judgment and on site signing in accordance with the Manual on Uniform Traffic Control Devices.

24.1: Adds direction that requires applicants applying for road use permits during times of the year when road use is normally restricted, to make financial arrangements for completion of an environmental analysis. Recodes to paragraph 3 direction previously set out in section 24.11 for electronic submission of form FS-7700-40 "Application for Permit Non-Federal Commercial Use of Roads Restricted by Order."

24.11: Changes caption from "Road Use Permit Clause" to "Instructions for Certain Clauses" and sets forth direction on instructions for certain clauses.

24.11a: Removes code, caption, and obsolete direction for "Special Instructions for Certain Clauses."

24.12: Establishes code and caption, and sets forth direction for "Supplemental Clauses."

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24.2: Adds cross-reference to Title 36, Code of Federal Regulations, section 261.13. Adds direction that emergency vehicles operating under emergency conditions are exempt from permit requirements, but that exemption does not apply to overload ratings of bridges.

24.21: Adds direction to consider modeling permits after forms used by State Departments of Transportation.

24.22: Removes all obsolete cross references except cross-reference to FSM 7731.17.

25: Adds direction to find road management objectives. Removes obsolete direction for implementing traffic management strategies.

25.1: Changes caption from "Traffic Control Devices" to "Signs and Traffic Control Devices." Removes obsolete direction and sets forth new direction to design signs and traffic control devices using engineering judgment in accordance with the Manual on Uniform Traffic Control Devices requirements.

25.11: Removes cross-reference to FSH 7109.11. Revises title of EM-7100-15 from "Guidebook for Forest Service Signing" to "Sign and Poster Guidelines for the Forest Service."

25.12: Adds direction for use of ditches and berms.

25.2: Changes caption from "Redirection and Attenuation Devices" to "Traffic Management Strategies." Recodes to this section direction previously set out in section 25.3.

25.21: Establishes new code and caption "Application of Traffic Management Strategies to Roads Not Subject to the Highway Safety Act." Recodes to this section direction previously set out in 25.31. Removes cross references to FSH 7709.11. Adds direction to prohibit passenger cars by special local designation on motor vehicle use maps when necessary, to coordinate the "discourage" strategy with motor vehicle use maps, and to consider use of travel management signs in the "eliminate" strategy. Revises direction for the prohibit strategy to utilize Title 36, Code of Federal Regulations, section 261.13 as the primary prohibition instead of Title 36, Code of Federal Regulations, section 261.54 orders.

25.22: Establishes new code and caption "Application of Traffic Management Strategies to Roads Subject to the Highway Safety Act." Recodes to this section direction previously set out in section 25.32

25.3: Removes code and caption "Traffic Management Strategies" and recodes direction to section 25.2.

25.31: Removes code and caption "Application of Traffic Management Strategies to Roads Not Subject to the Highway Safety Act." Recodes direction to section 25.21.

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25.32: Removes code and caption "Application of Traffic Management Strategies to Roads Subject to the Highway Safety Act." Recodes direction to section 25.22

27: Revises direction to include cooperating with State or local agencies to enforce vehicle weights.

30: Throughout the chapter, changes the term "Forest development road(s)" to "National Forest System road(s)." Removes references to FSH 7709.58. Recodes all direction on sharing of maintenance to chapter 60 of this handbook. Makes minor technical and editorial changes throughout the chapter.

30.1: Revises cross-reference from Title 36, Code of Federal Regulations, section 212.7 to Title 36, Code of Federal Regulations, section 212.5.

40: Throughout the chapter, changes the term "Forest development road(s)" to "National Forest System road(s)." Makes minor technical and editorial changes throughout the chapter.

40.1: Removes obsolete reference to Title 23, Code of Federal Regulations, Part 1230. Removes three Memorandums of Understanding, 76-SIE-004, 76-SIE-005, and Amendment Number 1 of November 29, 1982, with U.S. Department of Transportation agencies based on Title 23, Code of Federal Regulations, Part 1230. Adds references to Title 23, Code of Federal Regulations, section 500.108, and Title 23, Code of Federal Regulations, section 655.603, and the Manual on Uniform Traffic Control Devices. Adds reference to Title 36, Code of Federal Regulations, section 212.52.

40.3: Establishes code, caption, and policy that road user safety takes precedence over biological resources, roadside danger trees are to be identified, qualified persons should do the identification, and when hazards associated with danger trees cannot be mitigated, roads must be closed.

40.4: Removes direction and adds cross-reference to FSM 7733.04 for responsibilities.

40.4a: Establishes code, caption, and sets forth regional forester responsibilities related to identification and mitigation of roadside danger trees.

40.4b: Establishes code, caption, and sets forth forest supervisor responsibilities related to identification and mitigation of roadside danger trees.

40.5: Establishes definitions of "danger tree" and "qualified person." States that the terms "danger tree" and "hazard tree" are synonymous when used in this directive.

41: Changes caption from "Safety Standards" to "Highway Safety Program Components." Removes obsolete direction in subsections 41.1 through 41.5.

41.1: Establishes new caption and sets forth direction for "Traffic Engineering Services."

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41. 2: Establishes new caption and sets forth direction for "Identification, Investigation, and Surveillance of Accident Locations."

41.3: Establishes new caption and sets forth direction for "Design and Construction."

41.4: Establishes new caption and sets forth direction for "Roadside Design."

41.5: Establishes new caption and sets forth direction"Highway-Rail Grade Crossings."

41.6: Establishes new code and caption, and sets forth direction for "Roadway Maintenance."

41.7: Establishes new code and caption, and sets forth direction for "Hazard Identification and Correction." Establishes policy in Section B. regarding prioritization of Danger Trees, when to close roads due to Danger Trees, use of categorical exclusions from NEPA procedures when mitigating Danger trees, using all available methods for financing mitigation of Danger Trees, and prioritizing Danger Tree mitigation work against other road maintenance work through inclusion in the annual road maintenance plan.

41.8: Establishes new code and caption, and sets forth direction for "Incident Management."

41.9: Establishes new code and caption, and sets forth direction for "Forest Service Employees and Forest Service-owned Equipment.

50: Throughout the chapter, changes the term "Forest development road(s)" to "National Forest System road(s)." Makes minor technical and editorial changes throughout the chapter.

51.1: Removes obsolete direction for establishing traffic patterns and verification of the suitability of road management objectives. Adds direction to use traffic surveillance to determine accident rates.

51.2: Modifies existing direction for clarity.

51.3: Adds direction that Forest Service engineering personnel conducting additional investigation of severe accidents should have professional engineering registrations. Revises direction to include minimum accident data for other modes of travel and that required road data should include copies of approved reports and so forth. Adds direction to correct deficiencies identified in the course of accident investigations, retaining investigation records, and availability of investigation records through Freedom of Information Act.

51.4: Removes code, caption, and direction for "Hazard Analysis." Recodes direction to FSH 7109.55, chapter 30.

52.2: Changes caption from "Mixed Use on Forest Development Roads" to "Mixed Use on National Forest System Roads." Revises direction to include designations for uses under the

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Travel Management Rule and to follow procedures in FSH 7109.55 for Motorized Mixed Use Analysis. Removes exhibit 01.

52.3: Establishes new code and recodes to this section caption and direction for "Advanced Notice of Changes" that was previously set out in 53.1. Removes obsolete direction regarding details of information to be provided and restricting use on new roads

52.4: Establishes new code and recodes to this section caption and direction for "Maps and Signs" that was previously set out in 53.2. Removes obsolete direction regarding positive messages on signs. Adds direction to assure that route numbers on maps match route number signs on ground and to use appropriate guide signs when a traffic management strategy of "encourage" is in effect. Revises cross-reference from FSH 7109.11 to EM-7100-15.

53: Removes code and caption for "Public Information."

53.1: Removes code and recodes caption and direction to 52.3.

53.2: Removes code and recodes caption and direction to 52.4.

60: Establishes new chapter and recodes to this chapter direction previously set out in FSH 7709.58, chapter 10. Throughout chapter, changes term "Forest Development road(s)" to "National Forest System road(s)." Makes technical and editorial changes throughout chapter.

61: Removes direction for establishing maintenance criteria following the Process for Access Management. (Process replaced by the Travel Management Rule - November 9, 2005, 70 FR 68264.)

62: Removes direction regarding use of the Forest Service Central Accounting System. Removes exhibit 01. Adds cross references to FSM 7732.11 on road maintenance plans and to FSM 7732.04c for approval of road maintenance plans.

62.1: Removes reference to traffic service level. Changes term "closed" roads to "stored" roads. Adds direction that decommissioning is not considered maintenance, is a financial responsibility of resource programs, and may be financed with road maintenance funds if authorized by Congress in annual appropriations bills.

62.2: Removes requirements to store information in the Forest data management inventory system and in the sign plan and replaces with requirement to store information in Infra Travel Routes.

62.31: Removes traffic service level from list of factors.

62.32: Removes direction on constant and intermittent service and recodes direction to 62.33. Removes exhibit 01. Revises direction for maintenance level 1 by changing the term "stored" for "closed." Adds direction to not show level 1 roads on motor vehicle use maps. Adds

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direction on maintenance level 2 to indicate that user comfort and convenience are not a consideration, signs are generally not provided, and motorists should not have expectations of being warned of hazards. Revises direction for maintenance level 3 by including references to MUTCD. Adds direction on provision of signs and traffic control devices to warn of hazards and removes references to road surface type. Adds reference to MUTCD in maintenance levels 4 and 5.

62.33: Changes caption from "Management Decisions" to "Maintenance Levels." Removes obsolete direction. Recodes to this section direction on constant and intermittent service previously set out in 62.32. Adds direction clarifying roads open to administrative traffic only are not maintenance level 1, explains the sharp distinction between maintenance levels 1 and 2, the sharp distinction between maintenance levels 2 and 3, the distinctions between maintenance levels 3, 4, and 5 are less sharply defined, and other factors besides surface smoothness and speed of travel must be considered when assigning maintenance levels.

62.4: Removes obsolete direction and reserves code and caption.

62.6: Removes exhibit 01.

62.7: Removes direction on use of automated data processing systems, providing management a reliable assessment of total needs, and reducing the frequency of maintenance operations. Adds direction to consider operating roads at less than objective maintenance levels. Adds cross reference to FSM 7732.04c.

62.83: Removes obsolete direction to redo nonconforming work and to meet with line officers to review a representative sample of work.

63.2: Changes cross reference from 36 CFR 212.7 to 36 CFR 212.5.

63.21: Changes caption from "Timber Sale Contracts" to "Timber Sale and Resource Stewardship Contracts." Updates cross references to sections of currently used contracts. Removes cross reference to timber sale appraisal and updates cross references to timber sale administration handbook.

63.43: Establishes code and caption "National Forest Administration Generated Maintenance" and sets forth direction on financial responsibility for maintenance of roads during fire suppression, stewardship service contracts, and other administration related activities.

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Road system operations and maintenance is the process of managing National Forest roads and road uses to meet land and resource management objectives. This handbook provides guidance for conducting planning, traffic management, investment sharing (cost share), highway safety, traffic studies, road maintenance, and other road system operations and maintenance activities.

Transportation system operations and maintenance addresses the integration of all methods of National Forest access, including roads, trails, airfields, railroads, and waterways, with the overall management of motorized travel, both on-road and off-road. This handbook emphasizes road system related aspects of these multi-modal operations.

02 - Objective

To operate and maintain the National Forest road system in a manner that provides for user safety; support for resource programs; implementation of management area direction; protection of road investment, the environment, and adjacent resources; and meeting applicable air and water quality standards.

03 - Policy

Follow specific transportation direction in Land and Resource Management Plans and be familiar with resource objectives in Plans.

1. Coordinate operations activities with States, counties, and other local authorities, and be familiar with State and local laws that apply to the transportation system.

2. Coordinate operation and maintenance criteria with design criteria (FSH 7709.56, Road Preconstruction Handbook).

3. Work with other affected disciplines to ensure that operation and maintenance decisions are consistent with the intended purpose of the facility.

4. Be aware of outstanding rights that may affect operations and maintenance, such as reserved and outstanding interests in the road and outstanding off-highway haul authorizations.

05 - Definitions

See FSM 7705 and FSM 7730.5 for applicable definitions.

06 - Process for Travel Management

Exhibit 01 illustrates the process for travel management. Road system operations and maintenance serves two important functions in the process. The first is maintenance of road management objectives (RMOs), which document existing travel management direction. The other function is ongoing monitoring and implementation of travel management decisions. This includes assisting in development of motor vehicle use maps; development of operation and maintenance criteria; implementing traffic management strategies; implementing traffic rules and

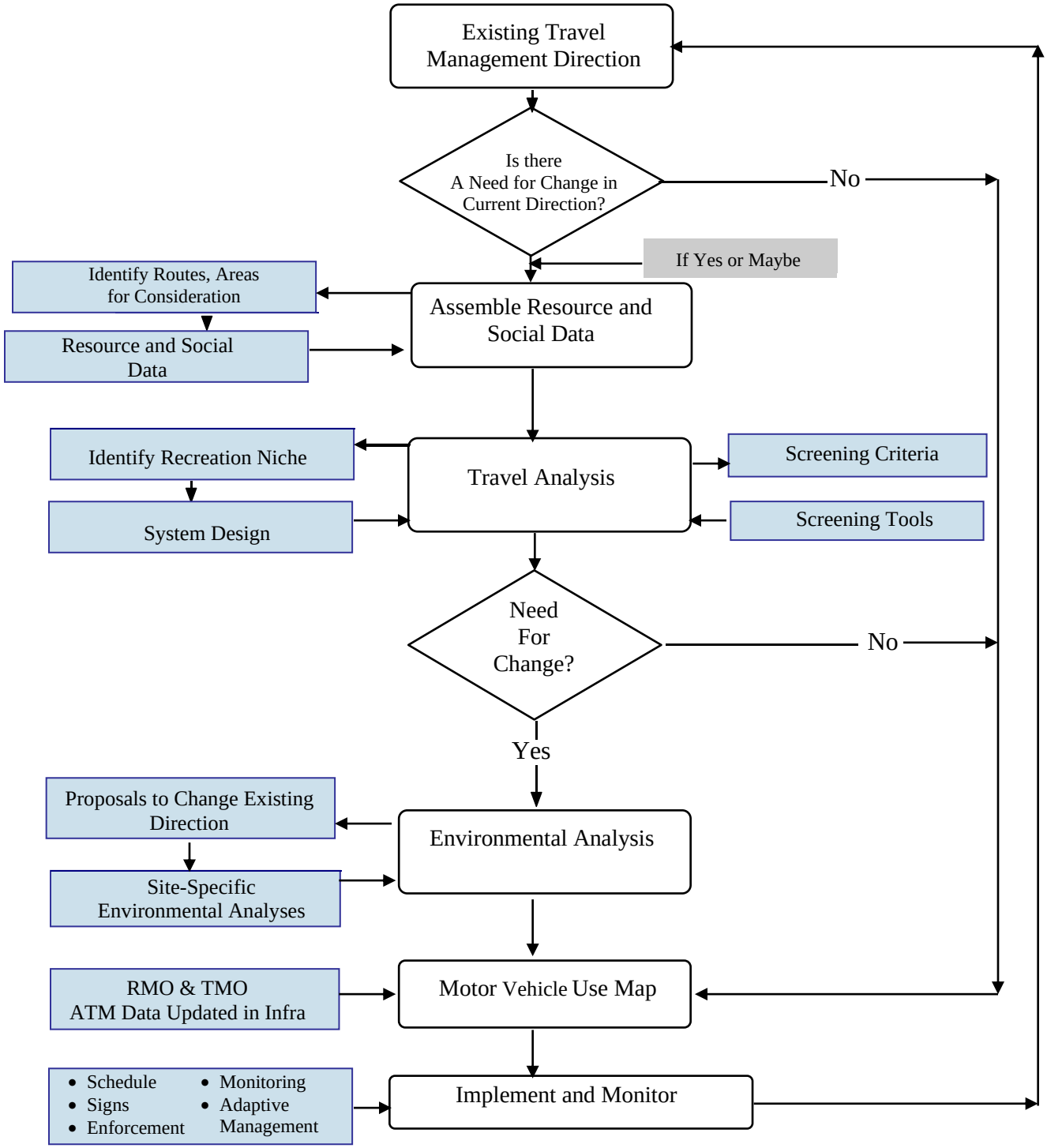
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orders; providing traffic control devices, permits, and other traffic control measures; and providing maintenance of roads.

For further information on the process for managing travel, see FSH 7709.55 chapter 10.

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Process for Travel Management



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