Nevada Tahoe Conservation District

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MEMORANDUM

TO: HOLLY HOLWAGER

FROM: DOMI FELLERS

SUBJECT: WASHOE COUNTY'S LOWER WOOD CREEK PHASE I AND II BMP REGISTRATION

DATE: 4/17/2024

CC: CHRIS FRITSEN, TIMBER WEISS, MEGHAN KELLY

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1. Lower Wood Creek Phase I and II BMP Registration (LWCph1n2_202309 in PLRM) is a new registration for Water Year 2024 with both parcel and treatment BMPs.
2. The Washoe County LWCph1n2 BMP Registration is comprised of eight (8) catchments with 44 potential credits based on Lower Wood Creek Phase I and II Water Quality Improvement Project (WQIP) constructed summers 2021 and 2023.
    a. LWCph1n2 BMP Registration is a new registration for WY2024, with an establishment date of March 1, 2024.
    b. This registration represents the LWCph1n2 WQIP (Figure 1), which installed an infiltration basin and underground infiltration galleries for stormwater treatment, along with improving road shoulder conditions by installing curb & gutter and stabilization.
    c. Parcel BMPs are included and were extracted from the SW Tools on January 9, 2024.
    d. The catchments are 100% connected to Lake Tahoe via conveyance features and ditches.
    e. Table 1 lists all the registration's BMPs and the potential credit per BMP in order of importance.
    f. Figure 1 shows the catchments, parcel BMPs, treatment BMPs and outfalls.

Table 1. Credit Potential per BMP Type.

Catchments	PLRM Treatment BMP Type	General Description	Asset ID	FSP Load Reduction (lbs/yr)	Potential Credit
J01b, C04b, C07a	Infiltration Basin	Infiltration Basin	WCIB0049	2408	12.0
LWCph1n2	Parcel BMPs			2265	11.3
J01b, C04b, C07abce	Infiltration Basin	Infiltration Gallery	WCIF0189to198	2050	10.2
C07a, C07e	Road Shoulder			658	3.3
C07c	Infiltration Basin	Infiltration Gallery	WCIF0199n200	952	4.8
C07d	Infiltration Basin	Infiltration Gallery	WCIF0201	512	2.6
			Total Credits->		**44**

3. GIS Layer Modifications
    a. Please refer to respective GIS shapefile attribute data 'ModDate' and 'ModNote' for adjustments to the GIS shapefiles.
    b. Land use
        i. There are three (3) adjustments between the original and baseline GIS shapefiles (Figure 2):
            - East side of registration at SR28 and Alder Ave the parcel listed as multi-family residential was not developed until after 2004 and the Washoe County Library was built by 2004, thus the parcels were adjusted to reflect pre-2004 land use conditions.
            - West side of registration south of SR28 the old Washoe County school should be a commercial property and not multi-family residential, thus the parcel was adjusted.
            - Parcel along Lakeshore in southwest corner was developed as a single family residential prior to 2004, thus the parcel was adjusted.
        ii. The are two (2) adjustments between the baseline and existing conditions GIS shapefiles (Figure 3):
            - East side of registration at SR28 and Alder Ave the parcel was adjusted to commercial to reflect the construction.
            - Parcel along Freels Peak was adjusted to single family residential from erosion potential.
    c. Road Conditions
        i. The LWC_RdCond_BL.shp GIS layer reflect Road Condition changes documented in Washoe County's 2017-2021 Road Registration. Adjustments occurred along Alder Ave, Mays Blvd, Southwood Blvd and private roads were removed from the multi-family residential parcels along Oriole (Figure 4).

ii. The LWC_RdCond_RdOps.shp layer reflect Road Condition changes documented in Washoe County's 2022-2026 Road Registration. Road Condition score adjustments to a 3.4 occurred along Southwood Blvd, Alder Ave, Northwood Blvd, Juanita Drive and Lakeshore Blvd (Figure 5, see Washoe County's Road Registration Road Operations Plan and Memo) .

d. Road Shoulder
    i. Figure 6 shows road shoulder adjustments from the original road shoulder GIS layer downloaded with PLRM (RoadShoulders_2011.shp) to baseline conditions (LWC_RdShlr_BL5.shp). These adjustments were made with the assumption that if the road shoulder is presently erodible, the road shoulder was not in better condition in 2004; thus, the road shoulder was designated as erodible for baseline conditions. Also, Washoe County and NTCD field verified the road shoulders on October 31, 2016.
    ii. Figure 7 shows road shoulder adjustments from Baseline to BMP scenario due to the LWCph1and2 WQIP improvements. The LWC_RdShlr_EC3.shp GIS layer was used for the BMP scenario.
e. Road Connectivity
    i. No changes to report.

4. PLRM inputs (Summary Report)
    a. PLRM Catchments: No inputs fall outside the recommended range.
    b. Treatment BMPs (Design parameters): No inputs fall outside the recommended range.
    c. Treatment BMPs (Characteristic Effluent Concentration): The default CEC's were utilized for treatment BMPs.
5. Treatment BMPs
    a. All treatment BMPs with water quality importance of 'Key or Essential' will be assessed, using BMP RAM, according to the features they are modeled as in PLRM.
    b. The underground infiltration features were modeled as infiltration basins because they treat both road and parcel stormwater runoff.
6. Parcel BMPs
    a. The parcel BMP data, extracted from the SW Tools on January 9, 2024, are of 'Essential' water quality importance for a potential 11 Lake Clarity Credits (Figure 1). NTCD will work with both Washoe County and TRPA to maintain existing or improve parcel BMP certification for this registration.
7. Catchment Baseline Loading Discrepancies
    a. The baseline load estimate developed in the 2016 Jurisdictional Baseline Report is refined with each credit registration. During the registration process, refinements have been made to the PLRM baseline inputs to better reflect baseline conditions; Table 4 below lists the changes in baseline load for this registration. The reduction in baseline load is assumed to come from changes (improvements) to the baseline road shoulders (Figure 6). NTCD maintains a comprehensive baseline load tally as continual refinements are made at the jurisdictional scale.

Table 2. Baseline Load Discrepancies.

Lower Wood Creek Phase I & II WQIP BMP Registration (subset)	2016 Jurisdictional Baseline Report Estimated FSP load (lb/yr)*	Registration Baseline Refined FSP load (lb/yr)	Baseline Difference (lb/yr)
Volume	na	35.8	
TSS	na	27,004	
FSP	18,320	16,199	-2,121
Phosphorus	78.7	69.0	-9.7
Nitrogen	309.2	270.1	-39.1
SRP	na	17.2	
DIN	na	35.5	

*2016 Baseline Loads performed with PLRM v1.1 which is no longer accessible, and the 2016 Baseline Report did not report values for all constituents, thus, no data exists for constituents labeled 'na.'

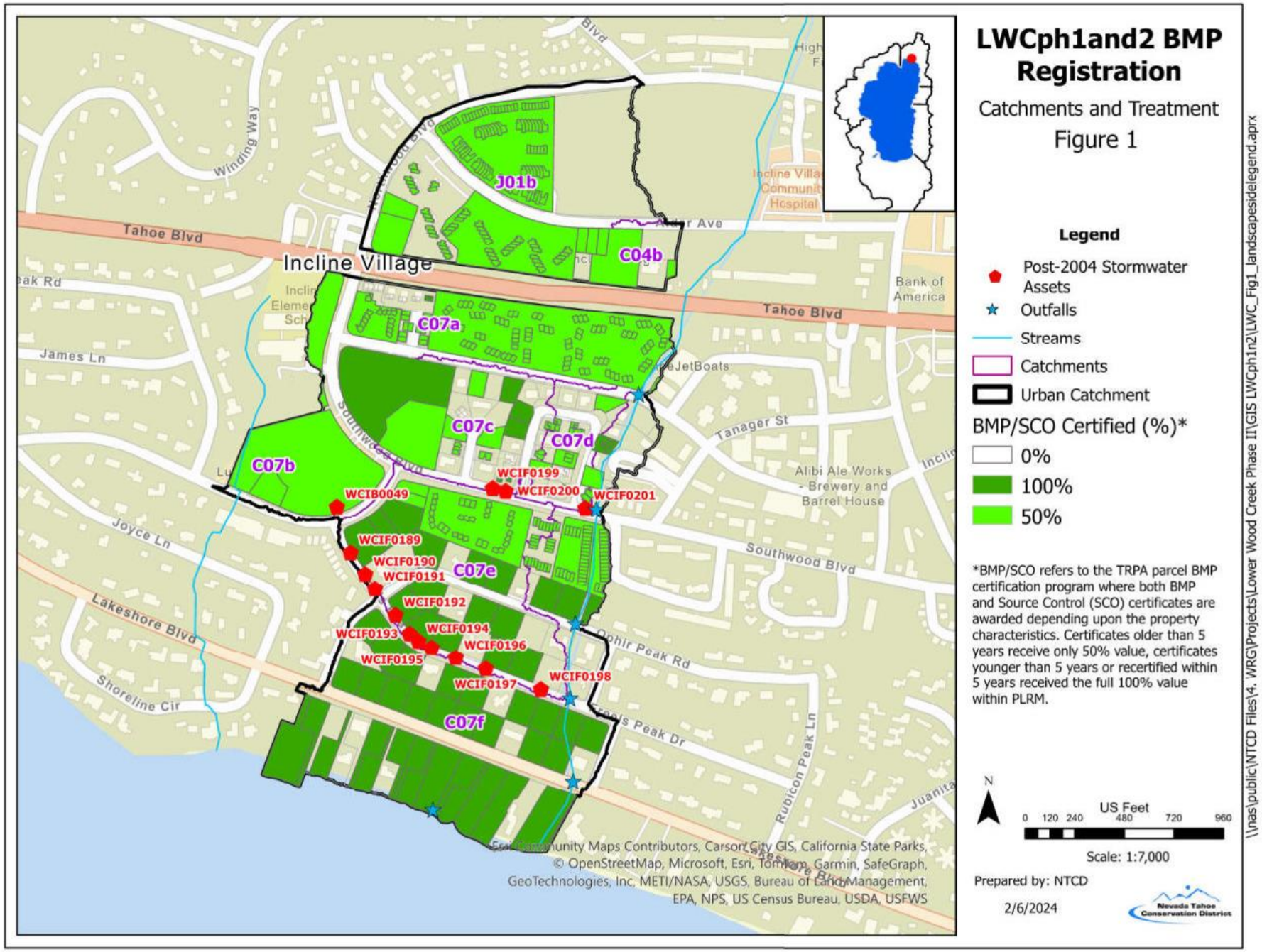

Figure 1. LWCph1and2 BMP Registration Catchments and Stormwater Treatment.

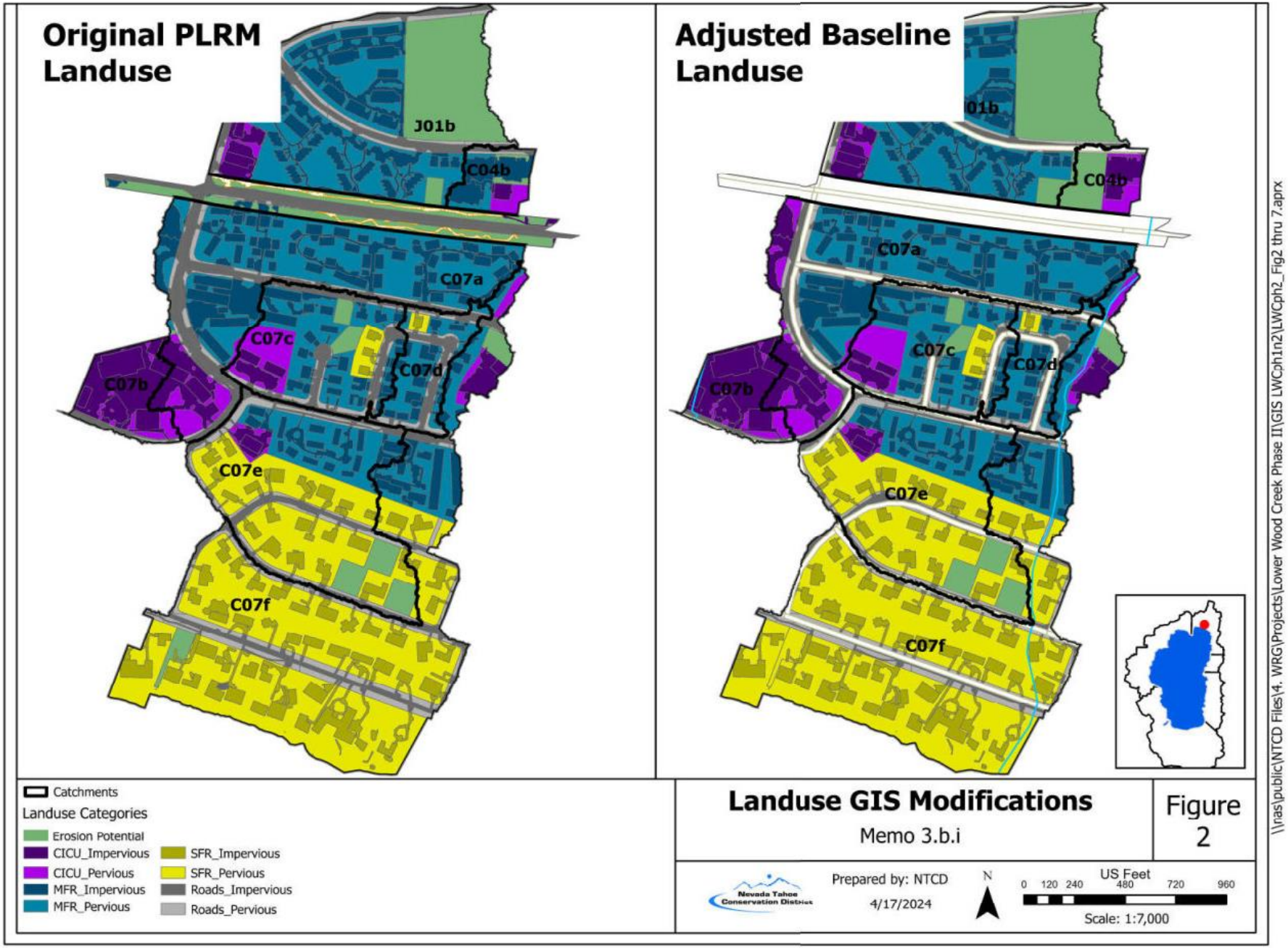

Figure 2. Landuse Adjustments from Original PLRM to Baseline GIS Layer.

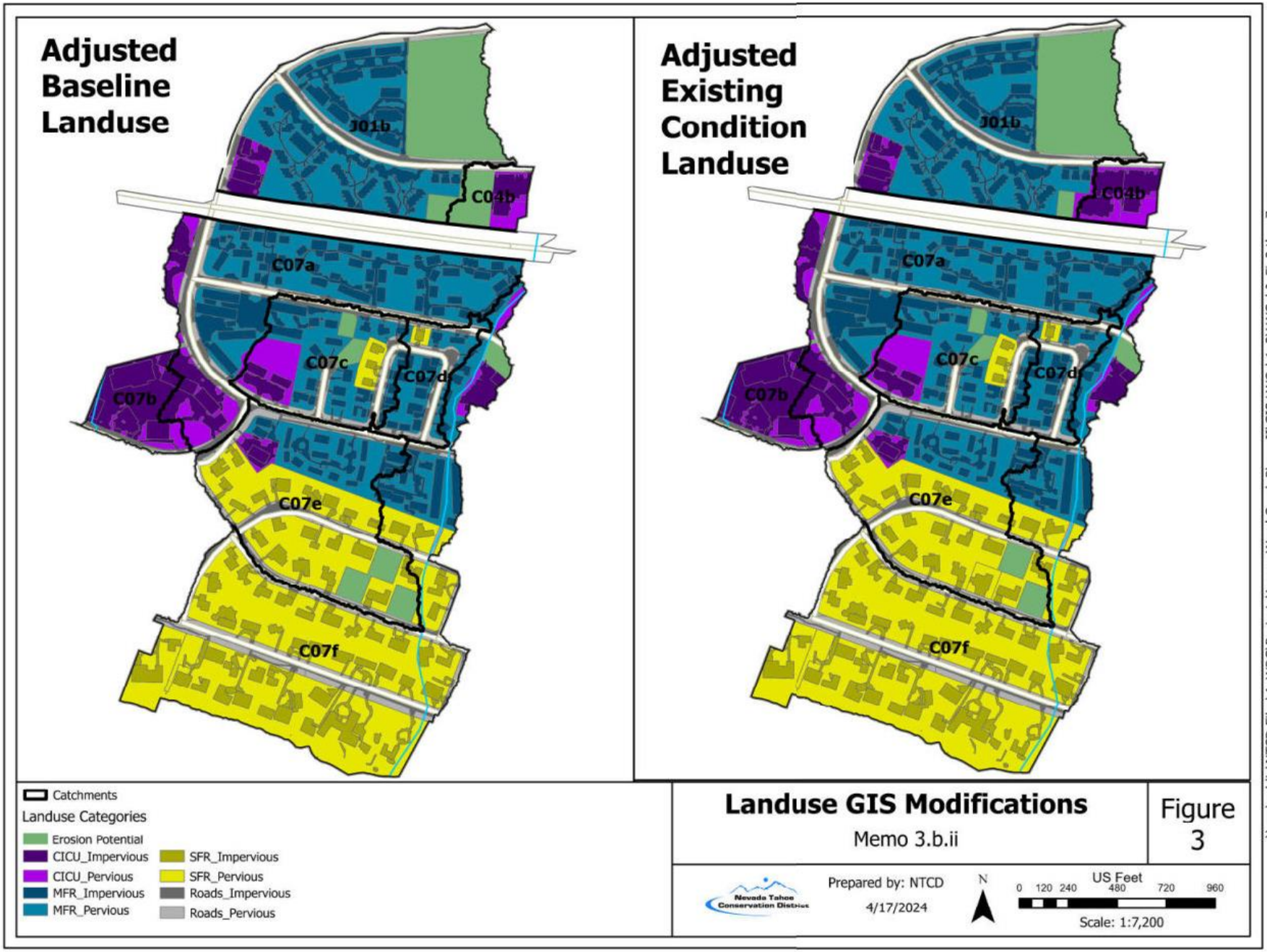

Figure 3. Landuse Adjustments from Baseline to Existing Condition GIS layer.

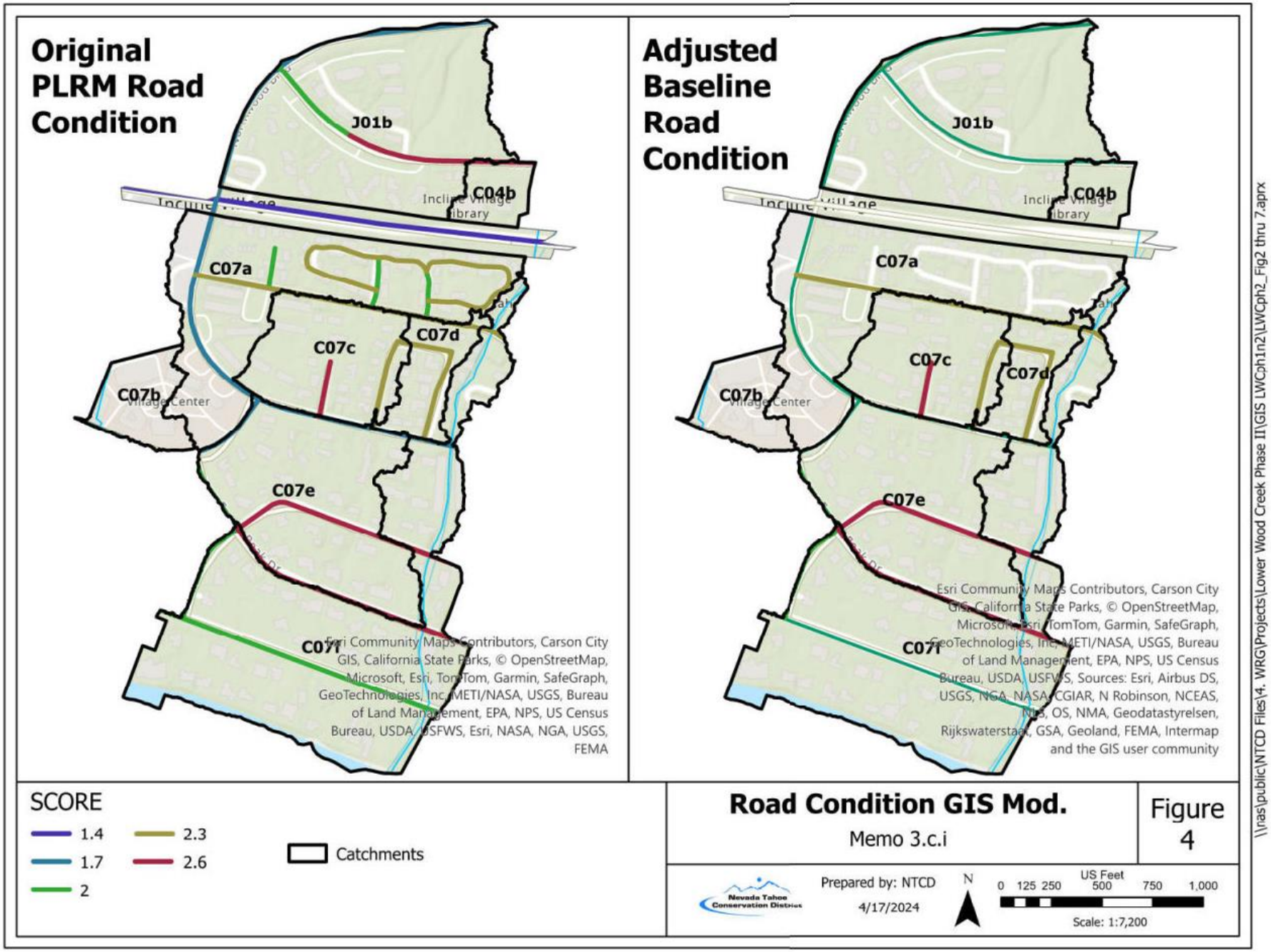

Figure 4. Road Condition Adjustments from Original PLRM to Baseline GIS layer.

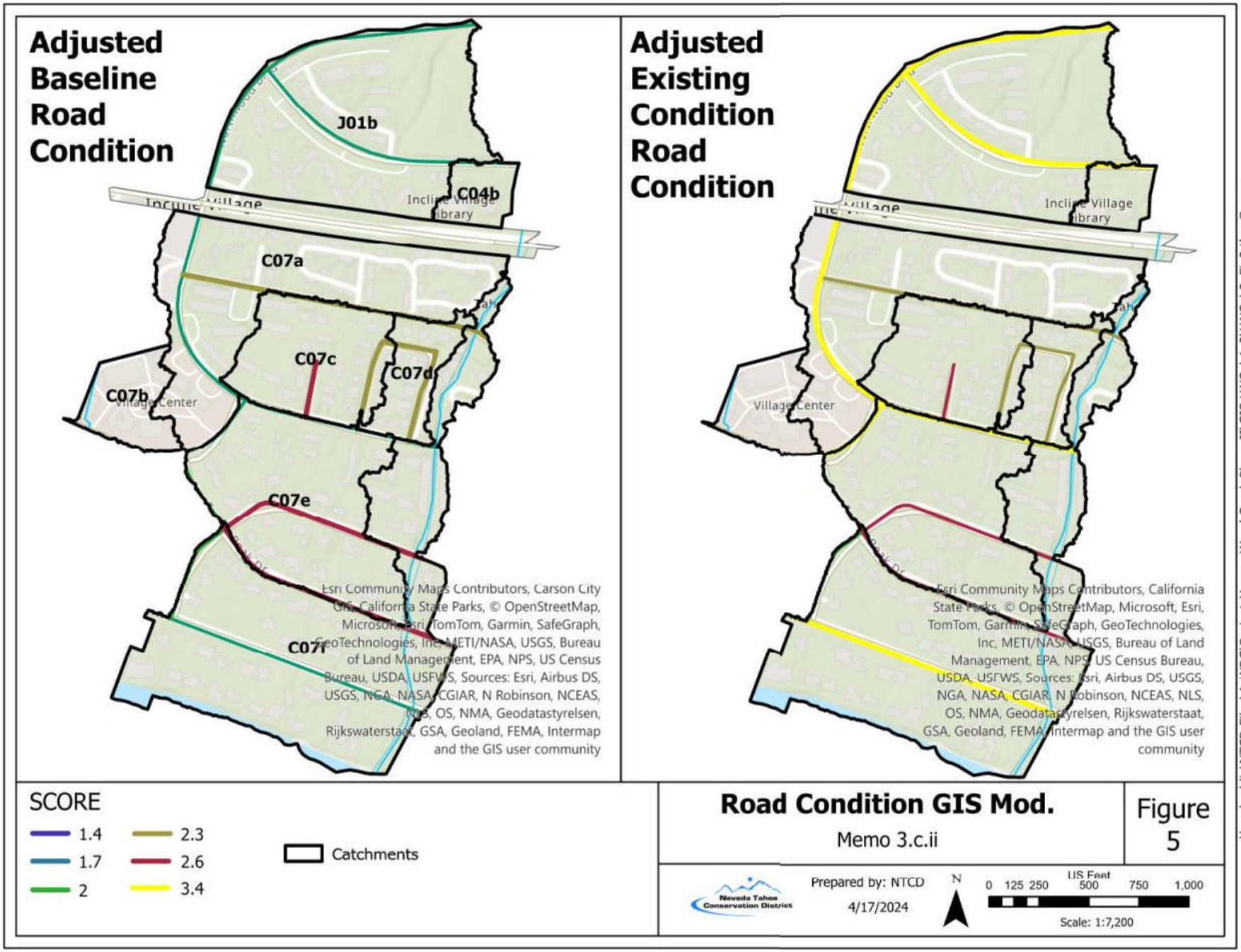

Figure 5. Road Condition Adjustments from Baseline to Existing Condition (BMP) GIS layer.

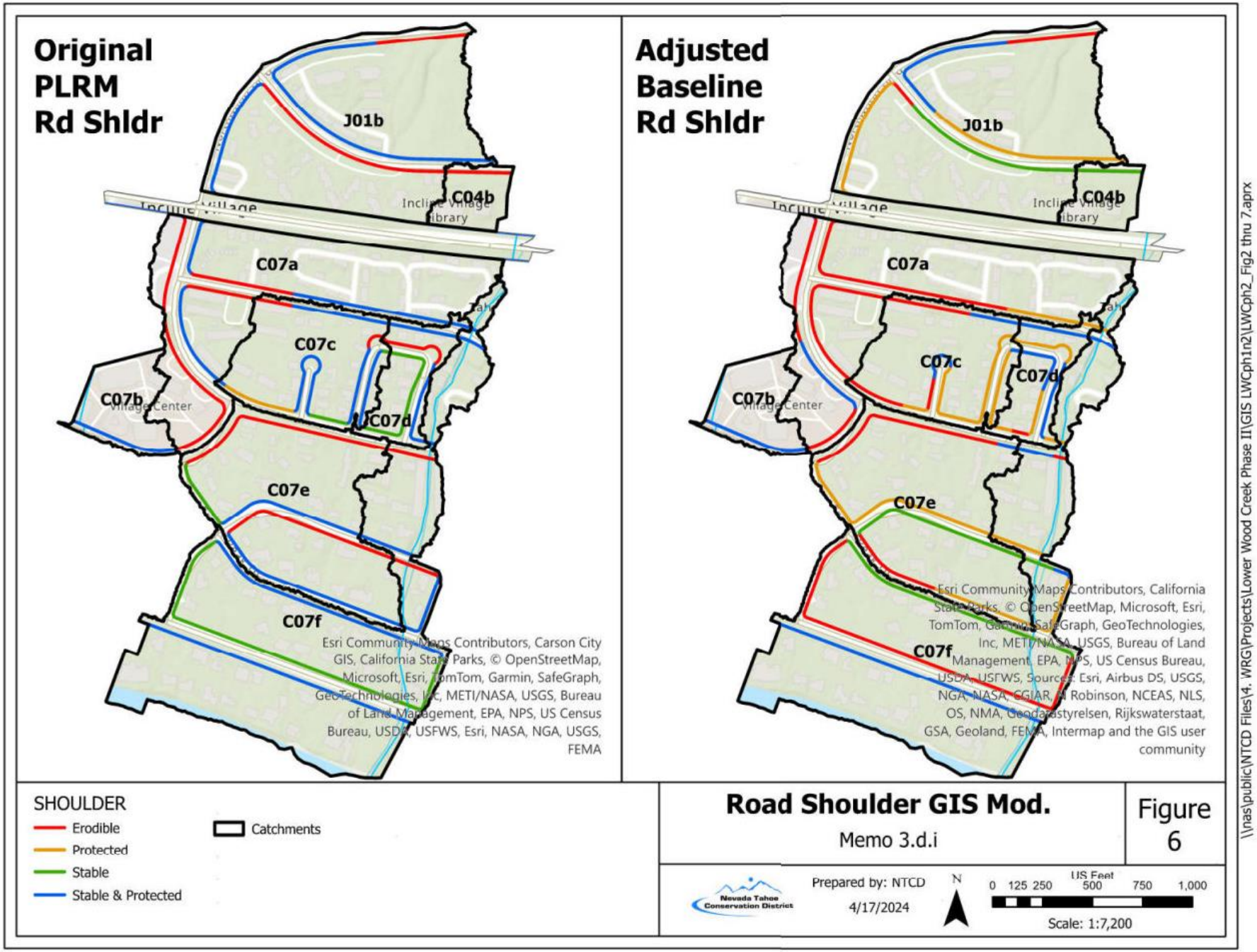

Figure 6. Road Shoulder Adjustments from Original to Baseline GIS layer.

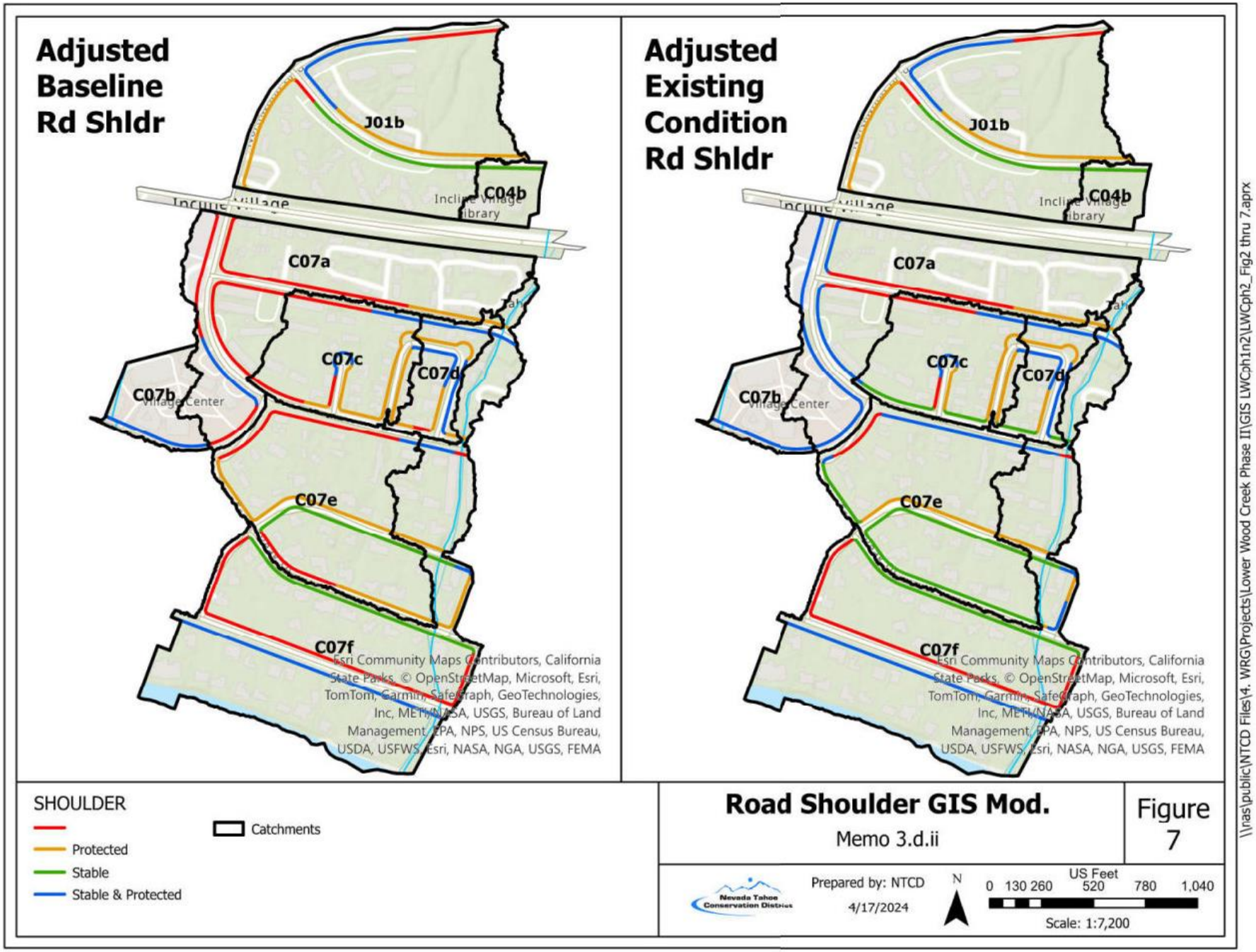

Figure 7. Road Shoulder Adjustments from Baseline to Existing Condition (BMP) GIS layer.